

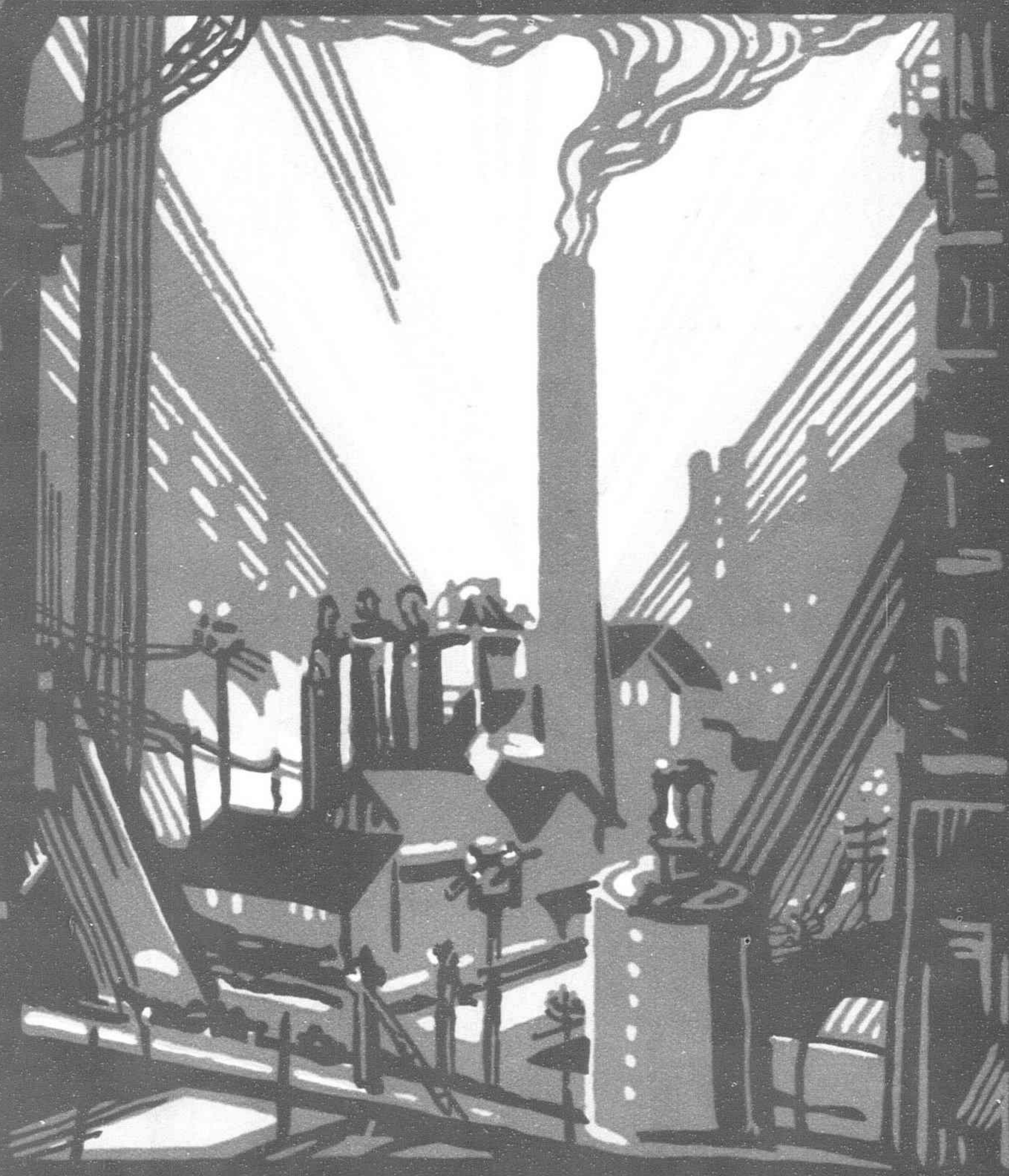
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THE FAR EASTERN REVIEW



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THE WAR IN SHANGHAI
BALANCE OF POWER POLITICS IN CHINA
RED ACTIVITIES IN CHINA AND
MANCHURIA

Vol. XXXIII

AUGUST, 1937

No. 8

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The Far Eastern Review

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The War in Shanghai

By C. J. LAVAL

WE may only present the record as it has been unfolding. None may count the consequences, measure the costs or predict the future.

China is held in a grip of warfare that had its beginning near Peiping on the night of July 7, spread swiftly through the Northern Provinces, then flared into devastating eruption in the Port of Shanghai and is sweeping into the great southern centers and through the hinterland up the Yangtze. Cities are ravaged, whole populations made desolate, many hundreds of thousands are homeless and destitute and many thousands are dead and dying. Yet no formal war has been declared.

All the world has reason for surprise at the bitterly staunch resistance that the Chinese armies, both in the North and around Shanghai, had been offering. Assuredly in this crisis the nation is united and even from the mouths of Japanese spokesmen tributes are paid to the gallantry and the fighting power of the Chinese soldiers. The operations of the Chinese troops in the various areas supply ample evidence of the far reaching extent to which preparations have been going forward through recent times for the eventuality that has befallen.

After the outbreak near Peiping and Tientsin, a series of lesser incidents developed in Shanghai. Popular feeling among the Chinese masses of Shanghai was fanned by false reports of Chinese victories in the North, and these supposed victories were celebrated by unrestrained outbursts of fire-cracker firing in the streets of the city. Undoubtedly, with the purpose of averting incidents in a period of greatest tension, the Japanese Government began the evacuation

of its nationals from the Yangtze river ports. The Tokyo Government's object at this time, it was announced, was to adopt a policy of non-aggravation. Events in Shanghai marched to a new climax on the afternoon of August 9, when Sub-Lieutenant Isao Ohyama and his chauffeur, Seaman Yozo Saito of the Japanese Naval Landing Forces were shot and killed in the vicinity of the Hungjao Aerodrome.

Perhaps A Baby Caused It

A number of versions of causes that led to this double tragedy in Shanghai's western environs has been given. Perhaps as true as any of the other stories told is one that sets forth that the shooting indirectly was caused by the birth of a baby to the wife of an American aviator. According to this account Stirling Tatum, who has been serving as an instructor of Chinese pilots at Hangchow, obtained permission to use a Government plane and fly to Shanghai

from Nanchang, so that he might be with his wife when their child was born. It is said that the arrival at Hungjao Aerodrome of this aeroplane that Tatum brought from Nanchang on a purely personal mission aroused Japanese suspicion and curiosity. This led the two members of the Naval Landing Party to drive their motor-car along Monument Road near the aerodrome on the afternoon that they were killed.

This incident brought tension in Shanghai to near the breaking point and with memories of the fighting and destruction of 1932 in their minds, the Chinese population of Chapei and in the districts north of Shanghai became terrified and began to leave their homes in thousands, carrying possessions on their backs and filling the streets of the International Settlement and French Concession, as they attempted to seek sanctuary under Occidental flags. While a farcical investigation of the circumstances in connection with the Hungjao Aerodrome shooting was dragging along, on August 11, a

Japanese Naval Squadron steamed into the Whangpoo River, bringing reinforcements that then gave a total strength to the Naval Landing Party a little more than 3,000 men. Four Japanese cruisers and seven destroyers came up the River that day. The arrival of these war craft gave new impetus to the tidal wave of Chinese refugees fleeing from their homes in the Northern districts. The Joint Commission, which was provided for in the 1932 Truce Agreement, met on the afternoon of August 12. Charges were made by the Japanese Consul-General that the Chinese had failed to withdraw their armed forces from areas surrounding the Settlements. It was also charged that Chinese regular

troops then had arrived in the Chinese area in violation of the 1932 Truce Agreement. The negotiations and the discussion of the Joint Commission came to nothing and on the night of August 12, The Shanghai Municipal Council ordered the mobilization of the Shanghai Volunteer Corps. On that night also the Chinese threw a barrier across the Whangpoo River from the boundary between the French Concession adjoining Chinese territory to the opposite Pootung side of the River. This was done by sinking a number of steamers and large junks in the channel of the waterway, shutting off navigation leading up-stream to the Lungwha Arsenal and Lungwha Aerodrome. British and American residents of Northern areas of Shanghai were advised by their Consuls to withdraw into the Settlement and the Chinese Municipal Government removed its offices from the Civic Center, North of Shanghai, near the waterways to buildings formerly occupied just south of the French Concession near Lungwha. It was estimated at that time that the Chinese had surrounded the foreign Settlements with

It Can't be Helped

Events compel us to ask the indulgence of readers and advertisers for the abbreviated form of this issue of *The Far Eastern Review*, and for some delay in its publication. Adequate reason for this is furnished by the blasts of bombs and high explosive shells, the roar of anti-aircraft batteries, and the rattle of machine-gun fire that have shattered the peace of fair August days, paralyzed all normal activities of this great port and caused the mass evacuation of a large proportion of the foreign and Chinese populations. As this is written shipping through the Port virtually is suspended, airplanes laden with deadly missiles are droning overhead, the deafening explosions of bombs and large calibre shells are audible nearby, and Shanghai's foreign areas are ringed with the flames of a half dozen spreading conflagrations, the costs of which mount into hundreds of millions while lives lost, combatants and non-combatants, number many tens of thousands. We are carrying on as best we may.

forces numbering from 20,000 to 30,000 men, while Defence Forces within the foreign areas, including the Shanghai Volunteer Corps, numbered less than 5,000, including about 3,500 Japanese Forces.

Friday, August Thirteenth

Fighting began on the morning of Friday, August 13, on roads leading from Chinese territory into the Hongkew district. This was a clash between the Japanese and Chinese patrols and each claims that the other fired first. The outbreak of rifle and machine-gun fire then spread swiftly through many districts in the Northern and North-eastern sections of the city.

The 1932 Truce Agreement, violation of which Japanese assert led to the present conflict, was the Agreement that brought an end to the Sino-Japanese warfare in the spring of 1932. This Agreement set a definite boundary north of Shanghai, a distance of from 20 to 40 miles, outside of which Chinese troops were to remain "pending later arrangements." The agreement provided for the withdrawal of Japanese troops into the International Settlement and extra-Settlement roads north of the Hongkew district. In the demilitarized area a special Chinese constabulary was to function. Observance of the agreement was to be supervised by a Joint Commission.

By the night of August 13, when sporadic firing was in progress in the Northern Sections, all the emergency machinery of the authorities of the International Settlement and the French Concession was in operation with defence lines along the Soochow Creek manned by the British Loyal Regiment, the American Marines, units of the Shanghai Volunteer Corps and the Russian Detachment. Measures were being taken then by British, American and French authorities to bring in reinforcements, British troops coming from Hongkong, French troops from Saigon and American Forces from Manila and San Diego. A curfew ordinance was proclaimed forbidding street traffic between the hours 10 p.m. and 5, a.m., the swift moving record of events that followed may be summarized as follows.

When the Bombs Fell

Saturday, August 14.—Chinese began bombing attacks from the air aiming bombs at the Japanese Flagship *Idzumo* moored at the Mail Wharf in front of the Japanese Consulate buildings and the Flagship opened with her anti-aircraft guns. This initial bombardment caused a panic stricken flight of Chinese from Hongkew into which several bombs had fallen. Early in the afternoon, Japanese seaplanes bombed the Hungjao Aerodrome. Between four and five o'clock in the afternoon two Chinese bombing planes passed over the end of Nanking Road at the Bund dropping two bombs, one of which struck the roof of the Palace Hotel wrecking the entire building, and the other striking the Cathay Hotel across the street. Casualties in this bombing numbered about 400 of which 145 were killed, including a number of foreigners. Thirty minutes after the bombing of the two Hotels the same Chinese plane dropped two bombs at the busiest sections of Avenue Edward VII, a main east to west thoroughfare. These bombs struck the roadway at the corner of Boulevard de Montigny, in front of a Chinese amusement resort known as the Great World. About 1,050 persons were killed in this blast and 400 injured, a number of well-known foreigners lost their lives, including the prominent American missionary, Dr. Frank J. Rawlinson, and Mr. and Mrs. H. S.

Honigsberg who were driving by the place in a motor-car. Identification of many of those killed in these Saturday's bombings was impossible because the bodies were blown to fragments.

Sunday, August 15.—Official announcement was issued by the British Authorities that the evacuation to Hongkong of all British women and children would be made as early as practicable, the first evacuation to take place on the P. & O. Liner *Rajputana* on August 17, while other steamers were summoned. Americans were warned by the American Consulate to be prepared to evacuate. A Food Committee was organized by the Shanghai Municipal Council. Chinese aeroplanes continued to fly over the foreign area encountering anti-aircraft firing from Japanese batteries. Many were wounded in various sections of the city by falling pieces of shrapnel. All forms of public transportation, tramcars, omnibuses and taxicabs suspended services in foreign areas.

Monday, August 16.—Japanese seaplanes actively attacked, bombing the Pootung District across the Whangpoo River where Chinese troops were reported to be concentrating. Chinese air planes continued attempts to bomb the Japanese Flagship. Japanese authorities condemned "blind bombing" by Chinese planes over foreign areas and announced that no Japanese planes bearing bombs would be flown over foreign areas. Japanese reinforcements are landed. The city was startled at 9.30 at night by a terrific explosion on the waterfront caused by a torpedo that had been aimed at the Flagship *Idzumo* from a Thornycroft speedboat.

Several thousand Japanese refugees sailed for Japan on Japanese steamers. Chinese street mobs attacked and beat to death pedestrians resembling Japanese, among them several Koreans, Filipino and Portuguese. The Shanghai General Hospital evacuated in the evening to the Lester Institute on Avenue Road. Closing of banks caused an acute currency situation, owing to a lack of subsidiary coinage circulating. Evacuation of American women and children decided by American authorities. Supply of gas by the Shanghai Gas Company suspended. The



A Shanghai street corner after the bombing plane had passed

Chinese Post Office suspended parcel post and money order services.

Tuesday, August 17.—Evacuation of British and American women and children began on steamers convoyed by foreign destroyers. Embarkation of refugees rendered difficult in the Yangtze Estuary owing to typhoon weather. The 2nd Battalion The Royal Welsh Fusiliers arrived from Hongkong. Intensive bombing continued during the day on both sides, the Japanese attacking the North Station region and Pootung across the Whangpoo, Chinese troops made strong attacks on the border of Hongkew. Shanghai Telephone Company service crippled when one exchange in eastern district suspended when a cable was broken by a shell explosion in the roadway.

Wednesday, August 18.—A second contingent of American women and children are evacuated, embarking on the steamer *President McKinley* to Manila. The 1st Battalion The Royal Ulster Rifles arrives from Hongkong on the steamer *Empress of Asia* and are quartered in the Public School for Girls. Two Japanese youths are murdered in the French Concession by a Chinese mob. Intense fighting proceeding in the Northern and Eastern Districts where much sniping takes place. The American Flagship *Augusta* comes up the Whangpoo and anchors in midstream off the Canton Road Jetty. American, British and French warships are anchored before the city. The Chengju Wireless Station was bombed by Japanese planes and put out of service north of Shanghai.

Thursday, August 19.—An International Relief Committee representing various charitable and civic organizations was organized to provide for more than a hundred thousand destitute Chinese refugees of the half million refugees that have entered the foreign areas. More foreign women and children are evacuated, including British, American, Dutch, Scandinavian and Italian, by the steamer *Empress of Asia* and other steamers. Heavy fighting continued in Hongkew areas. Chinese Military authorities issued a demand to all foreign Naval authorities requiring foreign warships be withdrawn at least five nautical miles from the nearest Japanese warship. This demand was rejected.

Friday, August 20.—Heavy bombing in Pootung and in the Northern and North-eastern areas caused extensive fires when huge areas in Chapei, Hongkew and Pootung were in flames. At 6.40 p.m. a shell exploded on the quarterdeck of the American Flagship *Augusta* killing Seaman Frederick John Falgouth and wounding 18 members of the crew, several seriously. Japanese aeroplanes raided Nanking. The Ward Road Prison containing 7,000 prisoners in grave danger from spreading conflagrations and from shell and machine-gun fire. Evacuation of American and British nationals continuing. Fourteen hundred leaving on three steamers. Authorities order opening of 25 rice depots fixing the price of rice at \$15 per picul.

Saturday, August 21.—Conflagrations continue to spread in many sections in Hongkew, Chapei and Pootung. The Japanese Flagship *Idzumo* moved down the river. More than fifty thousand refugees in the International Settlement are being cared for in sixty camps. Evacuation of French and Portuguese women and children is begun. First authenticated air battle witnessed above Jessfield between a Japanese seaplane and a Chinese bomber. The Chinese aircraft being put out of action on the unexpected appearance of a second Japanese plane diving downwards from the clouds. Aeroplane bomb hits the Yangtszepoo depot of the Asiatic Petroleum Company and the fuel oil tanks are set ablaze. Situation at the Ward Road Gaol, hemmed in by fires, was so serious that the Council decided that there was no alternative but to evacuate the prisoners, probably releasing those serving lesser terms.

Sunday, August 22.—Shanghai Municipal Police attempt evacuation of Ward Road Prison, moving five hundred in a convoy of trucks, after which further evacuation of prisoners forbidden by Japanese Military Command, Japanese asserting that prisoners would be recruited as Chinese soldiers.

Monday, August 23.—Japanese Forces effect landing on the Pootung side of the River, six miles from the Bund. Estimated Japanese Military and Naval strength is now more than 50,000 men. General Iwane Matsui, former Commander of the Formosan Army and a member of the Japanese Supreme Military Council, assumes command of the Japanese forces in Shanghai. At one o'clock this afternoon a half ton aerial torpedo fell from a great altitude on the roof of a warehouse used as storage quarters by the U.S. Naval Forces, crashed through the roof and two cement floors to a cement basement floor and was shattered without exploding. This bomb fell within 100 yards of the buildings housing both the American and British Consulates and within a stone's throw of the huge structure of the Hongkong and Shanghai Bank. Thirty minutes after this bomb fell a second struck the front wall of the Sincere Department Store, corner of Nanking and Chekiang Roads, exploding with terrific violence, wrecking the front of the Sincere establishment and seriously damaging the Wing On Department Store across the street. About 180 were killed and 600 were wounded. Several foreigners were amongst those killed and amongst the seriously injured was Mr. A. Billingham, associate correspondent of the *New York Times*. Foreign banks resume business.

Tuesday, August 24.—Desperate fighting taking place in the regions south of the shore of the Yangtze and north of Shanghai. Japanese air raids are made on Ningpo, Anking, Quinsan, Kading, Taitsang and on the railways and motor roads leading into Shanghai. Chinese aircraft make a night raid on the warship in the river.

Wednesday, August 25.—Japanese Military claim advances in the Liuho region on the Yangtze. French reinforcements from Indo-China consisting of 700 Colonial troops arrived from Haiphong in the command of Major Audeguix. Japanese Military authorities announce blockade directed against Chinese shipping on the China Coast. No restrictions imposed on foreign shipping.

Thursday, August 26.—Official notices given by Japanese Naval authority advising foreigners not to attempt to enter the Hongkew district. Intense fighting continues in the Luiho-Woosung front on the Yangtze, which has become the main theater of warfare in the Shanghai region. At 2.30 in the afternoon the British Ambassador Sir Hughe Knatchbull-Huggessen accompanied by Col. Lovatt-Fraser, Military Attaché and Mr. Hall Patch, Financial Advisor of the British Embassy were driving to Shanghai from Nanking when their car was machine-gunned by a Japanese air plane, and after stopping was bombed by a second Japanese air plane. The British Ambassador was dangerously wounded, a bullet going through his body and shattering a portion of a vertebra. Col. Lovatt-Fraser drove the car a distance of fifty miles to Shanghai, taking the Ambassador to the Country Hospital, where a blood transfusion was made from an American sailor. Chinese airplanes make another night raid over the Whangpoo River. The Nanking Government takes steps to issue half a billion Liberty Bonds.

Friday, August 27.—Intense fighting in the Woosung area. Both sides claiming gains. Observers report a Japanese bombing plane attacked by a Chinese pursuit plane was forced down north of Yangtszepoo. The Japanese claim that they have destroyed 176 Chinese military aircraft and 25 Chinese hangars have been bombed. Re-opening of Chinese cabarets occasions a patriotic outburst of National Salvation bodies. The condition of the British Ambassador gives hope for recovery.

Saturday, August 28.—Japanese aeroplanes bomb a great throng at the South Railway Station which was crowded with refugees, causing more than three hundred casualties. The Japanese asserted that the Station was bombed as it was a transportation transfer point for military units from the South. Chinese Military Leaders denied the presence of any soldiers at South Station when the bombing occurred. Cable communications are interrupted owing to damage to the cables between Woosung and Paoshan region of intense fighting. British Consulate returns to Bund building from temporary offices in Hamilton House.

Sunday, August 29.—Nanking announces conclusion of a non-aggression treaty with Soviet Russia. Chinese Post Office returns to main building on North Szechuen Road across Szechuen Road Bridge, resuming restricted services. Chinese and Japanese positions in Yangtze regions reported unchanged.

Monday, August 30.—Shanghai foreign areas pass first peaceful night undisturbed by any nearby bombardment. Nanking asserts treaty with Russia is not a "military alliance." Four Chinese airplanes bomb Robert Dollar steamer *President Hoover*, anchored fifty miles down coast from Woosung and twenty miles at sea, one bomb striking deck of vessel wounding seven members of crew, two seriously and stunning three passengers. H.M.S. *Cumberland*, Flagship of the British Fleet, hurries to assistance of the *President Hoover* with Japanese Destroyers who opened with anti-aircraft against the raiding Chinese planes which left scene pursued by Japanese airplanes from Japanese warcraft in Yangtze. The destroyer *Edsell* is dispatched down Whangpoo to the scene. On authority of Admiral Yarnell the *President Hoover* is ordered immediately to proceed to Kobe thence to the U.S. and radio instructions are sent to the steamer *President McKinley* proceeding up the coast from Hongkong to omit intended call at Shanghai and proceed on voyage homeward by way of Japan ports. Japanese reported to have landed heavy reinforcements on shore of Yangtze.

Tuesday, August 31.—Chinese accept responsibility for bombing of *President Hoover*, saying it was due to the airplane pilot's mistake in assuming that the steamer was a Japanese transport. Japanese naval authorities order general and complete evacuation of Chinese from Yangtszepoo district.

MANCHOUKUO DEFENCE RAILWAYS.—Construction of a 3,000-kilometer net of "national defence" railways is being planned by the Directorate-General of Manchoukuo State Railways, operated by the South Manchuria Railway Co. The disclosure was made at the inauguration, on March 20, of through freight traffic between Japan and Manchoukuo. Control of all railway lines in Manchoukuo is soon to be unified, and the head office of the South Manchuria Railway Company transferred from Dairen to Hsinking. The moves are expected to be carried out by the end of July. The General Direction of State Railways of Manchoukuo, at present located in Mukden, and the railway department of the S.M.R., now in Dairen, will be merged into one organization with headquarters in Hsinking, according to the plan.

Balance of Power Politics in China

By K. S. INUI

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THE diplomatic history of the Far East in some respects may be said to be an oriental edition of European politics of balance of power, in which game Europe has found China a skilful leader. It is a game which the world is making an awkward attempt at giving up in despair. China may yet come out with a confession, "I am tired of balancing all of you. Where will I be when you are balanced?" Japan emerges with a complaint, "No more balancing for me, thank you—I am getting too dizzy, I want to get down to *terra firma*."

No one can blame China for her ardent desires to rid herself of any foreign rights and concessions, if that is done evolutionally in proportion to her readiness to assume the responsibility. To eject them, however, rightly or wrongly, legally or illegally, from her vast domain, has been the slogan of her young and disorganized revolutionary leaders. But, unlike the staunch nation builders, they have been too natural and human. They preferred not to burn their own fingers in the process of extricating their country from the fire of international struggle. So there they are. These foreign concessions and spheres have remained as the landmarks and price of their diffidence and, indeed, cowardice, and of their not performing serious duties that were duly theirs, though it must be noted that considerable change has taken place since General Chiang Kai-shek took the helm.

It is the writer's purpose to try to trace only those phases of the Far Eastern Balance of Power politics in which the whole world also had to pay dearly for China's doings, and how skilfully, and yet shortsightedly, she has shuffled the cards of oriental politics, to which practice Japan now hopes to call a halt in order that these two eastern nations may truly co-operate and co-exist and that they may contribute their share of stability and peace to this turbulent world.

In so doing we will confine ourselves to a few cases beginning, say, with the Sino-Japanese War of 1894-5, as the result of which China ceded to Japan the southern half of the Fengtien Province, including the Liaotung Peninsula. No sooner did the Chinese delegate lay down his pen with which he attached his signature to the above cession, than Li Hung-chang, China's then Prime Minister and chief representative, approached the European Powers to interfere on her behalf with a view to regaining the Peninsula.

Germany, anxious to keep Russia engaged on the Far Eastern front, and France, Russia's faithful ally, together interfered on behalf of China. The war-worn Japan had no choice but to smile as prettily as she could, concealing her gritting teeth, and finally to agree, as was "advised," to an additional indemnity of 20,000,000 taels. However, none of these powers seemed to have any compunction of conscience. Russia herself occupied the very area which Japan was forced to give up. Germany took possession of Kiaochow, and France the Kwanchow Bay.

The day after the Japanese flag was withdrawn from the forts of Weihaiwei, which she was occupying pending the Chinese payment of the indemnity, the British flag was hoisted there to keep the balance of power in Chinese waters, though Great Britain returned the port in 1930 with certain reservations. Needless to say, the Japanese people then keenly felt a sense of injustice at the treatment received at the hands of the Powers, especially of Russia, and experienced the first taste of bitterness of the European balance of power as played in the Far East.

At this stage the United States, having newly acquired her possessions in Hawaii and the Philippines, entered the scene, and proclaimed a doctrine for equality in economic treatment, namely, the "Open Door." This caused a short lull in the scramble for concessions.

Seizing the opportunity, however, presented by the Boxer disturbance of 1900, which was staged largely in the Shantung Province and the vicinity of Peking, Russia poured her troops into Manchuria. By the end of the same year, the section virtually became a Russian preserve. At the same time she extended her

hand of intrigue to Korea and sought a naval station near the Tsushima Strait. China was both indifferent and unable to restore her authority in the three Eastern Provinces of Manchuria. For four years Japan protested, joined by Great Britain, with whom Japan was already in alliance, which alliance it was thought by the Japanese people would inaugurate their successful innings in the Balance of Power politics. The United States, too, repeatedly made vigorous protests to Russia, which were of no avail. But when the unheeded protests had to be put into action, Japan, and Japan alone, had to face the nation which up to that time was considered as the Great Bear of the North, though I do not mean to leave an impression that Japan was not appreciative of the important part Great Britain played as a most benevolent neutral.

The story of what followed is familiar to all. The Russo-Japanese War was fought on the soil of China, who was supposedly a neutral. As a matter of fact, at the call in 1921 of Secretary Hughes to reveal all international agreements between China and other Powers, it was found that Russia and China were the parties to a secret offensive and defensive alliance (the Li-Lobanoff Treaty of 1896) aimed at Japan at the time of the Russo-Japanese war, although China successfully assumed the rôle of a neutral. If this secret document had been known before the Portsmouth pact of 1905 was drawn up, the map of Manchuria might have been greatly different from what it is to-day.

All that Japan received, as the outcome of that titanic struggle, on which she staked her all, was, nothing from China, but, from Russia, a part of what Russia did then possess, namely, the Kwantung Leased Area and the southern half of the branch line of the Chinese Eastern Railway from Changchun to Port Arthur. As a matter of fact, as the retreating Russians destroyed all tracks, Japan fell heir merely to a right of way and road-bed, together with its accompanying rights and concessions, to all of which China later consented by treaties and agreements.

In order to oust Japan and Russia from Manchuria, before they became too well entrenched there, China skilfully manoeuvred to drag the United States in, in order to balance the scales, which, to China, appeared to be becoming too heavily weighted on the side of Japan. She assigned the task of driving a wedge between Japan and other Powers and of checkmating the Japanese railway interests in Manchuria to a British Construction Company known as Pauling & Company. Finding that the British Foreign Office, headed by Sir Edward Grey, was not enthusiastic in its support, she turned to the Harriman Railway interests of the United States, which were willing to undertake the task of challenging the Japanese and Russian influence through the sponsorship of Mr. Willard Straight, enterprising American Consul-General in Mukden. But this drive came to an end when Harriman died in 1909. To pursue the policy thus inaugurated by Harriman and Straight, Secretary of State Philander Knox, an amateur diplomat, formerly Senator representing the steel and coal state of Pennsylvania, was induced to make a feasible proposal for neutralizing the North and South Manchuria Railways in order ostensibly to remove any cause for future discord. The scheme was to float an international loan to cover the purchase price. But it was found that it was a part of this American scheme to count the Harriman concession, to which Japan was lukewarm, and Russia utterly opposed, among the assets, thereby giving America a lion's share of the sacrifice of the hard-earned interests of these two Powers. It was also revealed that the main scheme of the same American interests was to build for China a line parallel with the Japanese-controlled South Manchuria Railway from Chinchow on to Aigun on the Manchuria and Siberia border, where it conflicts with the Russian program.

Politics make strange bedfellows. This temporarily united Japan and Russia in protesting against the scheme (although Japan agreed finally on certain conditions), and paved the way for dividing Manchuria into two spheres of influence and thereby maintaining their *status quo*. Both Japan and China have given European and American nations occasions for interference, either politically or economically, by enlisting the Powers' support to draw water to their own rice fields.

There was one difference between the basic ideas of the Japanese and Chinese. The former were ready and willing to take full responsibility, even at the sacrifice of their national existence, while with the latter it was a game of controlling one barbarian by another, or, in the language of the street, of "letting George do it," forgetting the fact that George expected compensation for service rendered.

We now jump a few years before Japan is once more brought to one end of the scale in the game of balance of power. In scrupulous observation of, and by giving a broad interpretation to, the Anglo-Japanese alliance, Japan entered into the World War thirty-six hours after Great Britain made the request, namely, on August 7, 1914, two days after Great Britain declared war against Germany. In so doing she made it clear that she was determined to take possession of the German leases at Kiaochao and restore them to China. It is a well-known fact that by November 7, 1914, Japan was in actual possession of all German interests in the Shantung district.

China entered the war following the declaration of war by the U.S.A. in 1917, and, by virtue of that act, she claimed that the German rights and concessions in Shantung automatically retroceded to her. On the other hand, the Japanese contention was that there were none to retrocede to China when she entered the war, as the German interests were already in the hands of the Japanese and that Japan would not be in a position to restore them to China without the German consent, which Japan obtained at the Conference at Versailles—to which agreement China was unwilling to become a party. Thus the Shantung question became an issue between Japan and China; and China set in motion her pet machinery of diplomacy. China, in her characteristic way, at once sought to enlist the influence of the Powers in order to take away the rights and interests for which Japan fought, which were assigned to Japan at Versailles, and which Japan expressly stipulated that she would restore to China in due course. China, on one excuse or another, would not deal directly with Japan. The reader will remember that although the Shantung question was not an item of the Agenda at the Washington Conference, it was made a big "side-show," so to speak, in which China invoked the influence of other Powers of Europe and America, and particularly of two English-speaking countries. Though the principles were agreed upon between the two Eastern countries in Washington, the detailed arrangements for the final transfer were made in Peiping. The net result was as expected. It illustrates partly the Chinese distrust of the Japanese. But more than that—it shows the Chinese mentality of bargaining for the best terms with an invited outside influence and of controlling one barbarian by another.

The revolutionary diplomacy of treaty scrapping, or absence of diplomacy, is familiar to all. The Chinese Government of Nanking and Canton and the Kuomintang characterize the entire range of treaties unfavorable to their country as unequal treaties, and make the abrogation of them their creed. This forms one of the fundamental policies set forth in the declaration of the First National Convention of the Kuomintang of January 21, 1924. When the Kuomintang included a section of Communism, to which we have already referred, they even dared to ignore the treaties by direct action in true Soviet style. The forced recovery of the British Concessions at Hankow and Kiukiang, illustrates this point.

The authorities of the Waichiaopu periodically declared publicly their plan of nullifying important treaty rights of foreign countries, thereby making public their impossible promises to the people. On December 1, 1929, China issued an unilateral and arbitrary declaration revoking extraterritorial jurisdiction as from January 1, 1930. She issued threatening communications to foreign Governments, hinting that China would resort to methods other than negotiations if the question of the aforesaid jurisdiction was not satisfactorily solved by the end of the following year, 1931. This attitude of China as directed against Japan was more than pronounced. There were, by September, 1931, no less than 55 regulations or administrative orders in Manchuria, directly aiming at the restriction or deprivation of the acquired landed or mining interests of Japanese. There are twelve more whose purpose was to curb Japanese activities in Manchuria, including their rights of engaging in business or residing in peace. There were 17 more orders and regulations, secret or otherwise, which were directed against Koreans in particular. Most of these regulations consisted in punishing the Chinese or bringing pressure to bear upon them so that no Japanese could enjoy the rights and privileges clearly

defined in treaties. This method of nullifying international commitments usually finds its twin measure in the secondary boycott and excesses by pressure.

We had a list of some fifty-three types of Chinese violations of Japanese rights and interests in Manchuria between 1929-1930, another of 386 cases of banditry for the year 1930, and another of 59 cases of traffic obstructions within ten months of 1931—both within the South Manchuria Railway Zone—without burdening you with accounts of the Chinese construction of parallel railway lines to the S.M.R., delinquency in the return of loans and interests, 115 cases of illegal shooting by the Chinese at Japanese merchantmen along the Yangtze Valley, innumerable boycott illegalities or cases of kidnapping and the like, elsewhere. The one point, however, in this connection, which we must not overlook, is this: In surprisingly large numbers of these representative cases, the Chinese Government officials or soldiers in regular uniform were involved, proving beyond doubt that the Chinese Government, or the Kuomintang as such, had definitely, consistently and systematically pursued policies which fell far short of the standard and practices of the day, relative to the sanctity of international treaties and the usages of friendly international intercourse. When the Wanpaoshan Incident took place in 1930, the Chinese populace declared an economic war upon Japan, in spite of the prompt and spontaneous expressions of regret by the Japanese Government and without waiting for negotiations between the responsible representatives of the two Governments. By the time of the Nakamura Murder Case, indignation in Japan was brimming over. Any additional challenge to Japanese rights was to be just one drop more than the cup would hold.

Such was the position at the moment when news of the blowing up of a stretch of the tracks of the South Manchuria Railway by the Chinese regulars belonging to the Peitaying Barracks reached the already nervous Japanese detachment of railway guards, through whose minds were passing kaleidoscopic views of the surrender of the Hankow and Kiukiang concessions by the British only a short while ago, the seizure of the C.E.R. system by the Mukden troops, the persecution of their nationals, and the murder of their own comrades, and all in utter disregard of the treaty rights for which their country twice staked her all.

Another point which we must not ignore is the fact that the Republic of China, whatever that term may mean to each one of us, was brought about by overthrowing the legitimate Manchu Dynasty, which kept its seat of government in Peiping for over two hundred years. From the Manchurian point of view Sun Yat-sen and Chiang Kai-shek were rebels. China undoubtedly had a nominal sovereignty over Manchuria, but, as a matter of long practice of foreign representatives, no one consulted Nanking about the affairs of Manchuria. Consuls-General at Mukden were important, and accredited, as you might say, to an almost independent Government at Mukden. They dealt with it directly on almost all questions not involving other parts of China, and if necessary demanded the blessing of Nanking afterwards, if such was found feasible.

When the trouble broke out in Mukden in September, 1931, as in other cases, the Chinese instantaneously and automatically turned to a friend in need and appealed to the machinery in Geneva, although China had, up to that moment, had no interest in the Geneva institution, being about eight years in arrears in the payment of her annual dues. If the same thing had happened in any respectable social or sports organization in my country the defaulter would long before have been expelled from it. With the best of intentions the League at once decreed that both China and Japan should withdraw their troops within certain areas, this being a ready-made and cut-and-dry formula which was in the League's archives. Nor could Geneva realize that the Chinese representatives in Geneva were at the time speaking for a small section of the country along the Yangtze Valley. The Chinese delegates were eloquent, compromising and willing to accept the bidding of the League, which, however, was unable to see that that was necessarily the end of the performance so far as China was concerned. Japan was dealing with a reality—about 12,000 troops facing 200,000 Manchurian soldiers in a hostile country. Russia was not yet a member of the League of Nations, and America had kept aloof from it, except when she chose to interest herself. Once more the precipitate action or resolutions of the League seemed like another formidable expression, not of collective security but of joint interference on an unprecedented scale, ignoring absolutely the primary

right of two nations to settle their own disputes, and offsetting one barbarian by a set of barbarians.

On October 9, the Japanese Foreign Minister had already made a concrete proposal to the Chinese Minister stationed at Tokyo. The terms advanced were:—

- (1) Mutual repudiation of aggressive policy and conduct.
- (2) Respect of China's territorial integrity.
- (3) Complete suppression of all organized movements interfering with freedom of trade and stirring up international hatred.
- (4) Effective protection throughout Manchuria of all peaceful pursuits undertaken by Japanese subjects.
- (5) Respect for the treaty rights of Japan in Manchuria.

"The Japanese Government believe," it was said in Japan's communication to the League, "that all these points, being in entire accord with the aims and aspirations of the League of Nations, and embodying the national basis upon which the peace of the Far East must depend, will commend themselves to the approval of the public opinion of the world." The realistic Japanese were inclined to conclude that the Pecksniffian attitude of the meddlesome long nose of Geneva kept China from entering into direct negotiations with Japan.

There may be in the mind of some of my readers one searching question—why is it that Japan did not conform to the findings of the Lytton Commission when she herself proposed it? As a matter of fact the writer, personally, believes that the Report was a splendid document, and that many of its points were well taken and, on the whole, very fair. Its success, however, hinges on one big point, namely, the way in which China differs from other members of the League. It rightly recognizes that the *status quo ante* is not sufficient, and readily admits that the establishment of a strong central Chinese Government is essential before any useful permanent solution can be achieved. We have already waited twenty-five years, and how many more years will we have to wait until Nanking can speak reasonably effectively for all parts of China, over which it claims sovereign rights? If we accept such a recommendation as that made by the Lytton Commission, it would involve either an indefinite period of waiting for China to reach that condition, though latest signs are somewhat encouraging, or else a long period of international control or intervention in China before the Sino-Japanese disputes are settled.

Balance of Power politics have been bad enough, but to transform the Far East into another cock-pit of international politics, which international control means, is far from the ideal of any sane person, even of China. Europe and America can accept the Lytton Report and wait. They can afford to be legalistic, idealistic or even luxurious in their sentiment. But with Japan, her interests and security are too intimately interwoven with China to rely upon any half-way measure.

The writer discerns occasional expressions of apprehension as regards Japan's sincerity of purpose. He does not blame those who are responsible for those expressions at all, though they are often the conclusions derived from meagre information on the actual situation. Likewise, rightly or wrongly, there has been considerable apprehension or misapprehension on the part of a large number of our people as to the fairness of the judgment by Westerners, whether it is expressed in the sacred international court of arbitration or in deliberated conference diplomacy. Space does not permit any further reference to these points.

Lord Robert Cecil said the Manchurian question was largely befogged because one delegate (the Japanese) spoke too little, and the other (Chinese) spoke too much. The last game of the balance of Power has stirred the whole world. "We are afraid that we have burdened the delicate and untired Geneva machinery with too heavy a load all too suddenly, and have viewed the case for Japan not too lightly, but with little knowledge."

Fortunately, many Chinese leaders have come to repeat aloud the time-honored saying, "God helps those who help themselves." They are now seriously working on the "new life" movement. It is hoped that the self-salvation and reconstruction movement will develop along the healthy road of co-operation between the East Asiatic Powers. On the other hand, it is gratifying to note that an increasing number of Japanese leaders on their part are counselling patience and moderation. Japan does not expect, for a moment, to be a sole arbitrator in the East. Addressing the Governor's Conference on May 4, 1934, the then Foreign Minister Hirota made clear the Japanese position when he called "the maintenance of peace and order in East Asia the basic obligation which Japan must bear in common with other East Asiatic States." What Japan proposes to China is the partnership of neighbors, and not the balance of power, in the Far East.

HAINAN ISLAND DEVELOPMENT

Malayan Hainanese leaders have formed a company to develop the agricultural and mineral resources of Hainan Island.

The company will be a million dollar concern. Two representatives recently visited the island to make preliminary investigations, and one has returned to make his report.

A Chinese message from Canton states that the Central Government has decided to build a naval base and other defence works in Hainan, and Mr. T. V. Soong, the chairman of the National Economic Council, recently visited the place which is his native place and studied development plans. The proposal was accepted by the recent Third Plenary Session of the C.E.C.

It is also reported that British, American and French interests are interested in the development scheme.

A correspondent states that several Hainanese leaders are members of the \$1,000,000 corporation. He writes further as follows:

The original mover of this gigantic project, is Mr. Cheong Chew Tong. Messrs. Quek Kee Suan and Quek Kee Shin are taking the leading part along with Mr. Nhim Wee Chiow to bring the scheme to fruition.

Two representatives of the concern have already visited Hainan to report on conditions obtaining there at the moment and generally advise the prime movers in Malaya.

It is said that as soon as their report reaches the Malayan committee work will be started in Hainan. The aim of the company is to tap the agricultural and mineral resources of the Island independent of the Chinese Government's activities. It is generally acknowledged that Hainan is a land flowing with milk and honey, needing exploitation.

Coming to the strategic importance of the Hainan island, it will be recalled that its potentialities purely from the point of view of fortification came into sudden limelight during the recent Japanese naval manoeuvres in Chinese waters when the Pakhoi Incident occurred. Pakhoi, where a lone Japanese trader was reported to have lost his life at the hands of a crowd of infuriated Chinese some months ago, overnight became front page news and thus focussed attention on Hainan.

The Chinese National Government sat up and took notice and sent secret observers to gauge the potentialities of the island. As stated above, Mr. T. V. Soong himself lately paid an official visit and inspected the island thoroughly. In Hongkong immediately after his visit, he made a statement to the Press regarding the proposed development of Hainan and stressed its economic side.

Other Powers are reported to be keeping a close watch on the proposed development of Hainan from the point of defence. It is admitted on all hands that South China has not a better natural fort than Hainan. As a naval base it will be able to command all movements in the China Sea. It will be an impregnable base.

Because of its potential value as a naval and air base, considerable importance has been attached to plans for the large-scale development of Hainan, first mooted a few months ago by Mr. T. V. Soong.

Subsequently, the Japanese press persistently reported foreign interest in Hainan, crediting British and French interests with plans to invest \$30,000,000 each in development projects in the island.

Red Activities in China and Manchuria

(This survey of Russian communist activities in Eastern Asia is taken from the South Manchuria Railway publication, "Contemporary Manchuria.")

IMMEDIATELY after the opening of the Sixth Congress of the Comintern in Moscow in the summer of 1928, the Soviet Union, "the birthplace of Communism," launched its First Five-Year plan of economic development of the country. The Soviet Government under Stalin made a headlong drive in its endeavor to bring about the realization of the principle of the possibility in establishing a utilitarian form of socialism in Soviet Russia. Under the slogan "Overtake and Outstrip the Capitalistic Countries," the Stalin Government enforced its ambitious plans for the development of heavy industry. Giving to the world the impression of eliminating hunger and destitution of the masses in time of need, the Stalin régime enforced severe and oppressive measures, and blindly pushed its plans forward. For several years since 1928, Soviet Russia was so busily absorbed in its internal affairs that it had no reserve strength to show interest in its fundamental mission of Sovietizing the world. Under these circumstances there was no alternative for it but to follow a peaceful foreign policy of international collaboration which has come to be known as the "Litvinov Diplomacy." This is attested by the fact that the Seventh Congress of the Comintern, originally scheduled to be held in 1930, two years after the Sixth Congress, was postponed until July 1935.

Having completed the economic reconstruction of European Russia under the First Five-Year Plan, the Stalin régime moderated

its oppressive policies and launched its Second Five-Year Plan. Favored by bumper crops obtained yearly due to the enforcement of the Second Five-Year Plan, the Government was able to extricate itself from the critical situation prevailing at the time. At present it is feverishly engaged in both replenishing its huge armaments and in commencing the exploitation of the abundant natural resources of the Far Eastern Region.

At the Seventh Comintern Congress, Soviet Russia made it clear that it had not only no intention of abandoning its ambition of Sovietizing the world but, believing that conflict between the capitalistic and the socialistic worlds as unavoidable, was embarking upon an active campaign for the realization of this ambition. Emboldened by this Soviet attitude, the Congress, to the indignation and perturbation of the Powers which had hitherto maintained a peaceful attitude towards the Soviet foreign policy of "international collaboration," adopted a resolution in favor of making renewed efforts to bring about a world proletarian revolution. This resolution drew forth vigorous protests from the United States, Italy, Latvia and Japan.

Analysing the present international political situation, the Seventh Comintern Congress emphasized:

"... the world economic crisis and the unshakable foundation of capitalism have produced a disturbing effect on all international relations. The intense struggle in the world



will be stopped ; hereafter it will be directed against Japanese Imperialism by fully co-operating with European and American Imperialism.”

The manifesto indicates the Communist Party’s special stratagem of crushing first its confronting enemy and then of making preparations for the next campaign. This stratagem cannot be overlooked by the capitalistic countries which are deeply concerned with the Communist policy of conquering the world.

Activities of the Chinese Communist Party

The Chinese Communist Party was established in Shanghai in 1920 soon after the arrival in China of Virtinsky who was dispatched by the Comintern to organize a policy for the propagation of Communist ideas in the Far Eastern Regions. Since 1923 it has functioned as a branch of the Comintern. At the time of its formation it was nothing more than a meeting of a small group of men with similar ideals, but it was not long before it grew into a powerful organization. Its membership increased at an amazing rate and, during the period from 1925 to 1927, when the Party was at the height of its power, the number of members was said to have exceeded five hundred thousand. The acquisition of such a large number of members at that time was due, however, to the open adoption of Sun Yat-sen’s three great policies for the execution of the National Revolution, namely, the China-Soviet Union Confederacy, the Recognition of Communism, and the Assistance to the Peasants and Workmen.

After the “Purification” coups d’état of April 1927 (executed by Chiang Kai-shek in Shanghai on April 12 and by Li Chi-shen in Canton on April 15), the Party gradually lost its influence until finally it was compelled to become an illegal organization resorting to underground tactics. But by the outbreak of such extraordinary incidents as the Canton Commune of December 1927, and the establishment of the Changsha Soviet in August 1930, it proved that its influence had by no means vanished into oblivion and that its latent power was not a negligible factor in Chinese politics. The Red Army and the Soviet Area which were formed early in 1928 repulsed the five general drives of the National Army under Chiang Kai-shek and in 1931 even went so far as to organize at Juichin,

Kiangsi Province, a proletariat régime called the Provisional Government of the Chinese Soviet Republic. The large-scale campaign which had exhausted the greater part of the annual expenditure* of the Nanking Government finally succeeded in driving the main force of the Red Army out of Juichin, but this expulsion of the Communist Army may be said to have been a strategic abandonment on the part of Red forces. The fact that without engaging in any pitched battle with the Nanking Army and consequently without suffering any serious losses in fighting forces the Red bandits proceeded westward in a vast contingent, made one forecast the future recovery of the Red Army.

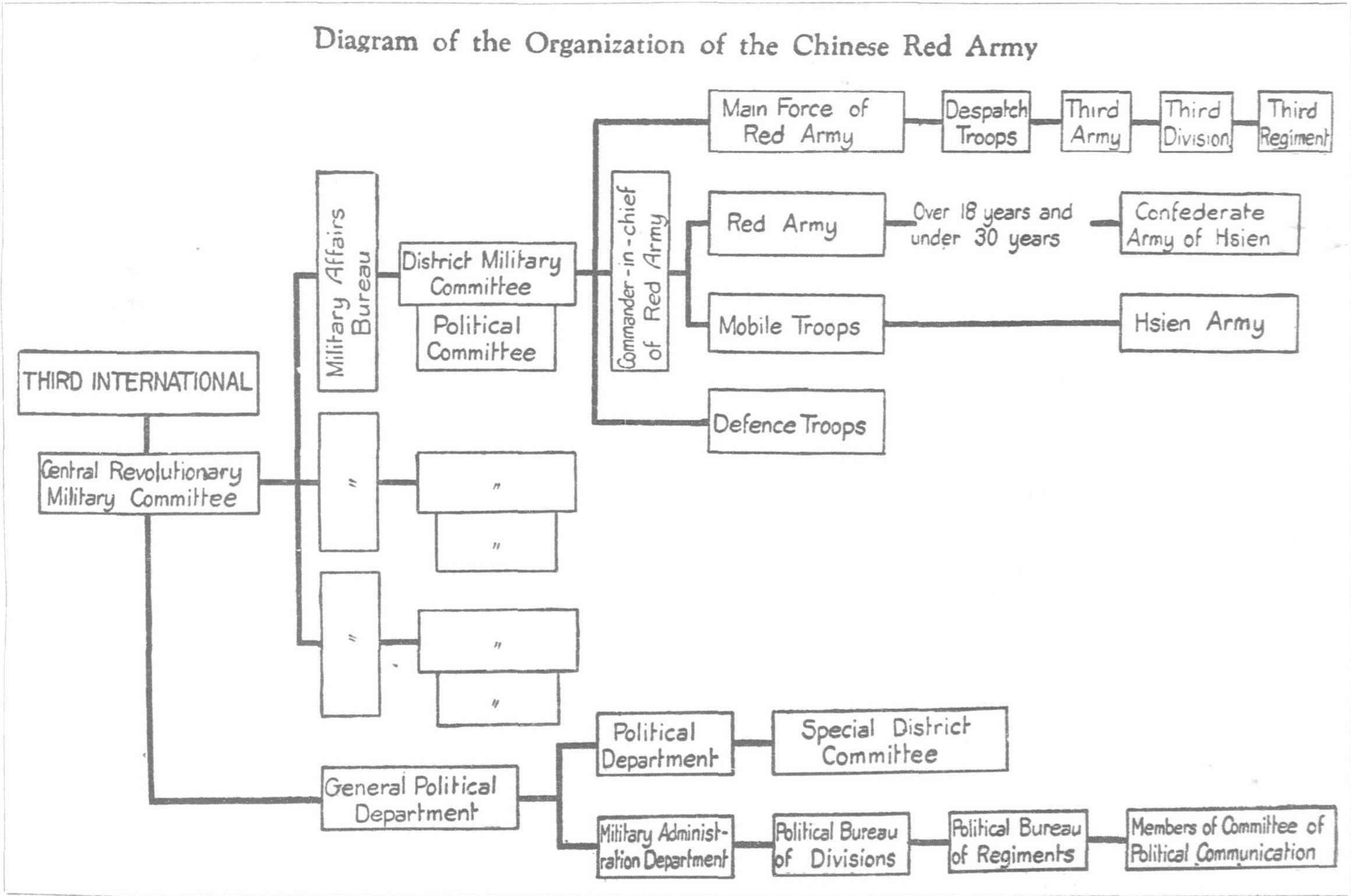
		Loans Debts	Adminis- trative expenses	Military expenses	Other expenses	Total
1931	{ Amount ..	238	56	303	85	682
	{ Percentage ..	34.8	8.1	44.4	12.7	100
1932	{ Amount ..	169	77	320	105	671
	{ Percentage ..	25.1	11.4	47.6	15.9	100
1933	{ Amount ..	202	98	372	154	826
	{ Percentage ..	24.4	11.8	45.0	18.8	100
1934	{ Amount ..	237	230	388	86	941
	{ Percentage ..	25.2	24.4	41.2	9.2	100
1935	{ Amount ..	275	348	321	13	957
	{ Percentage ..	28.7	36.3	33.6	1.4	100
1936	{ Amount ..	239	330	327	120	1,016
	{ Percentage ..	23.5	32.5	32.2	11.8	100

Unit : 1,000,000 yuan.
Fiscal year begins July 1 and ends June 30.

The apparent decrease of military expenditures indicated in the above table is due to the fact that all expenses for the reconstruction of roads and villages devastated by the Red forces were transferred to cultural and construction expenditures.

One part of the main forces of the Red Army, following their evacuation of Juichin, entered Shensi from Kansu after marching through Hunan, Kwangtung, Kweichow, Yunnan, Sikang and Szechuen. Finally last year at the end of February, the Red bandits invaded Shansi but withdrew to Shensi as soon as the Central Army had completed its military preparations. They are now making raids in Shensi and Kansu. Furthermore, in districts

*As is shown in the accompanying table, the annual military expenditures during the fiscal years of 1931-36 were greater than those of any other item in the Nanking Government’s annual budget.



of Szechuen and Sikang Provinces, there are strong divisions of the Communist Army and their movements are such as to be worthy of notice.

Concerning the Communist movement in China "The Report of the League Commission on the Sino-Japanese Dispute" (1929) has mentioned a few characteristic points and has indicated the fact that the Chinese Communist Party is a strong adversary of the Nanking Government.

"Communism in China not only means, as in most countries other than the U.S.S.R., either a political doctrine held by certain members of existing parties, or the organization of a special party to compete for power with other political parties. It has become an actual rival of the National Government. It possesses its own law, army and government and its own territorial sphere of action. For this state of affairs there is no parallel in any other country. Moreover, in China the disturbances created by the communist war is made more serious by the fact that the country is going through a critical period of internal reconstruction, still further complicated during the last eleven months by an external crisis of exceptional gravity. The National Government seems to be determined to regain the control of the districts under communist influence, and to pursue in these districts, once their recovery is achieved, a policy of economic rehabilitation; but in its military campaigns, apart from difficulties already mentioned, both internal and external, which weaken its position, it is hampered by the lack of funds and defective communications. The problem of communism in China is thus linked with the larger problem of national reconstruction."

In order to understand the peculiar process in the development of the Chinese Communist Party and its Red Army, it is necessary to consider whether or not the social situation at a certain time is adapted to that progress. Upon taking a general survey, it is permissible to observe that the social situation in China possessed the necessary conditions for the development of the Communist movement. After the completion of the People's Revolution in 1911, strifes among the cliques of militarists arose; peace and order disappeared and bandit raids became exceedingly prevalent. Furthermore, due to the development of capitalistic economy in the cities which usually accompanies the entrance of foreign capital, the economy of the rural communities with their remnants of feudalism gradually collapsed. As a result the proletariat sprung up. It was only natural that the various movements of the proletarians should respond to communism, which has for its motto the complete overthrow of Imperialism, capitalism, the warlords and the gentry. But even though there existed ample room for the diffusion of communistic ideals in China, it is doubtful whether the activities of the Chinese Communist Party alone could have brought about such a remarkable progress.* The chief motive power of this rapid development was in all probability furnished by the results of the spiritual and material support rendered by the Comintern. In discussing the Chinese Communist Party, it is therefore necessary to attach much importance to its relation with the Comintern—the Soviet Union.

Anti-Imperialism and Anti-Japanese Movement

As has been previously mentioned, the Chinese Communist Party, in vigorous opposition to the Nanking Government, established a Provisional Government of the Chinese Soviet Republic at Juichin, Kiangsi Province, in November 1931, thereby marking an epoch in the history of the Chinese Communist Party. However, unable to withstand both the repeated large-scale campaigns of the National Army under Chiang Kai-shek and the economic blockade put against them, they were finally forced to abandon Juichin on November 10, 1934.

The main forces of the Red Army under Chu Teh and Mao Tse-tung, which numbered about fifty thousand, following their evacuation of Juichin, moved westward to the frontier of Hunan, then marched through the provinces of Kweichow and Yunnan, and entered the northwestern part of Szechuen in June 1935, where they succeeded in joining with the troops of Hsu Hsiang-chien. For eight months after their withdrawal from the Soviet capital, the westward march of the Red forces had taken a zigzag course and the fact they had marched from six to ten thousand kilometers is worthy of being considered as an astonishing feat. Hsu Hsiang-chien's army numbered about fifty thousand and was called the

Fourth Red Army. It was exceedingly strong and stayed in the north-east of Szechuen Province for many years; its political commissioner Chang Kuo-tao was one of the leaders of the Chinese Communist Party.

The following month, namely in July, the combined Red forces commenced their march northward on to the frontier districts of Kansu and Chinghai. But in August, this Red Army, as the result of a diversity of opinion among the leaders as to the course to be followed in future by the Red Army, split up. Mao Tse-tung who contended for the northward march in order to establish a new Soviet area in close co-operation with the Soviets, crossed Paishui-kiang and entered Kansu Province, while Chang Kuo-tao who adhered to the policy of proceeding southward, advanced towards the Yaan Region with the majority of the troops of Chu Teh and Hsu Hsiang-chien.

The troops which followed Mao Tse-tung to Kansu numbered twenty thousand and was composed of the pick of the Red Army. From Kansu they advanced to Shensi Province, during their march picking up associates wherever they could find them. In the winter of 1935 they united with the divisions under Hsu Hai-tung and Liu Tsu-tan, which had been active in that province, thus extending the sphere of influence of the Shensi Soviet Government. The Red troops under Hsu and Liu had their base in the north of Shensi Province for a long time and after their union with Mao Tse-tung's troops, were able to adopt active measures in their movements.

At the beginning of 1935, the combined Communist troops advanced into Shansi Province and broke through the heavy defences of Yen Hsi-shan's army. By February 1936, they had brought the greater part of Shansi under their control. They, however, withdrew to Shensi and Kansu when several divisions of the Central Army launched a large-scale campaign against them in September 1936. The main forces of the Red troops are now active in Ningshia and Suiyuan Provinces.

After separating from Mao Tse-tung, the main troops under Chu Teh and Hsu Hsiang-chien returned to Szechuen Province and roved in the district west of Chengtu until the end of 1935. At the beginning of 1936 they advanced to Sikang Province and united with the forces under Hsiao and Ho at Hsiao-chinho in June. By the Hsiao-Ho Army is meant the joint forces under Hsiao Ko and Ho Lung. This mighty contingent of thirty thousand troops had been active in the northern part of Yunnan Province and the southern part of Szechuen. The leaders of the combined army held a conference at Kantzu, in the north of Sikang Province in the latter part of July and decided to return to Kansu Province and to reunite with Mao Tse-tung's troops. The meeting also decided to send the Hsiao-Ho army to Mongolia via Chinghai. The following month the vanguards of Chu Teh's troops commenced their march to Kansu. They are at present roving in the Ningshia-Inner Mongolia frontier districts.

After the fall of Juichin, the seat of the Provisional Government of the Chinese Soviet Republic, the Chinese Communist Party changed its headquarters from one place to another. Finally in February 1935, the headquarters was re-established in Shanghai, but owing to the growing intensity of the anti-Communist campaign of the Kuomintang and of the "Blue Shirts Society" which resulted in the arrest of many of its members, the Party's influence declined.

Under these circumstances the Communist Party abandoned its policy of devoting its entire efforts to the establishment of Soviet areas and adopted a new policy of acquiring the support of the masses in the cities, namely, that of the intelligentsia, of the small propertied classes and of the laborers. They would unite with all organizations and parties, including the Kuomintang, for the purpose of organizing a united front against Imperialism and Japan. As the first step in this direction, it issued on August 1, 1935, a manifesto "Anti-Imperialism of the Chinese Communist Party and Anti-Japanese National Salvation." This change in the Communist Party's policy was a memorable one and has produced no small effect upon the Far Eastern situation.

The principal object of the manifesto in question was the immediate anti-Japanese resistance and the elimination of dangers to the Chinese race. For the realization of this aim, it calls upon the people, all the parties, organizations and armies to discard past differences of opinion and advocates: (1) the establishment of a

*Immediately prior to the Communist Army's northward march in 1934, the Red sphere of influence extended over 100 "hsien" (districts) covering an area of 700,000 square kilometers. At present there are 300,000 Red troops in the frontier districts of Kansu, Shensi and Szechuen.

National Defence Government in co-operation with Soviet Russia and anti-Japanese régimes in the northeastern districts, and (2) the organization of the Chinese Confederate Anti Japanese Army, to be composed of the Red Army, of the Northeastern People's Revolutionary Army and of volunteer troops.

On the basis of resolutions passed at the Seventh Comintern Congress, the Central Political Bureau of the Chinese Communist Party, considering that only an anti-Japanese popular front on a most extensive scale can win against Japanese Imperialism, issued on December 25, 1935, the following manifesto concerning the materialization of the new policy and the formation of the Anti-Imperialism National Defence Government and the Confederate Anti-Japanese Army :

" In order to make efforts for the immediate establishment of a National Defence Government and a Confederate Anti-Japanese Army and to place them on a wide and popular basis the Chinese Communist Party shall actively form mass organizations, armed forces and anti-Imperialism and anti-Japanese organizations and shall also link the Central and local Governments with the Army. These shall be supported by the Soviet Communist Party. Furthermore, in order to place the anti-Japanese unified front on a wide and strong basis, the " Soviet Industrial and Agricultural Republic " shall be changed into the " Soviet People's Republic," and to unite all classes in the struggle against Imperialism and Japan, policies hitherto pursued in the Soviet areas shall be changed."

Red Activities in Manchoukuo

The Red activities in Manchoukuo which are threatening the administration of the new State have recently come to be conducted by villainous and lawless Communist bandits aiming at the creation of disturbances in the country. The Comintern's guiding principles on the Sovietization of the Far East, particularly of Manchoukuo since the Manchurian Incident, have been mentioned in resolutions passed by the Eastern Congress of February 1932, and by the 12th Congress of the Executive Committee held in the autumn of the same year. They have also appeared frequently in correspondence sent to the Committee of the Manchurian Provinces by the Central Committee of the Chinese Communist Party. The principles in question lay stress on the analysis of the situation following the Manchurian Incident and on measures to cope with the situation. A summary of the Red activities conducted in Manchoukuo until recently by the Committee of the Manchurian Provinces under instructions of the Chinese Communist Party's Central Committee issued under date of February 22, 1934, will be given below.

Analysing the situation in Manchuria after January 1933, the Central Committee's instructions to the Committee of the Manchurian Provinces pointed out the existence of a " peculiar situation " and called the latter's attention to :

- (1) the intensification of the Japanese campaign against the anti-Japanese masses and mobile troops since the conclusion of the Tangku Truce.
- (2) the decline of the Kuomintang's influence over the volunteer troops and the increased influence of the Chinese Communist Party.
- (3) the lack of connection between the mobile troops due to the lack of unity among them.

As regards the above situation, the Central Committee's correspondence states :

" The Communist Party in Manchuria, in order to develop the anti-Japanese revolutionary war to its advantage, under the armed protection of Soviet Russia, should take an active part in all anti-Japanese movements of the masses. Enumerating every concrete question relative to practical movements, it should present the contentions and general principles of the Central Committee and expose the blunders of the Kuomintang and all other anti-revolutionary factions thereby isolating them. By the adoption of a proletarian policy, the popular revolutionary front should be further strengthened through the formation of volunteer anti-Japanese armed mobile troops. A Provisional People's Revolutionary Government should be established and a revolutionary front of the workmen and peasants set up to participate in the anti-Japanese struggle. The Communist Party in Manchuria should fight for the acquisition of the power to win over the

proletariats to join the anti-Japanese movements of various races in Manchuria."

Immediately upon receipt of the above correspondence, the Committee of the Manchurian Provinces met in Harbin and decided to order its agents in the eastern Manchoukuo-Soviet border districts to show greater activity. The conference also decided upon the adoption of the following tactics with regard to the districts along the former North Manchuria Railway :

- (1) The further strengthening of the organization of the Communist Party in Manchuria and application of further efforts to win over the lower classes.
- (2) In view of the good results obtained from propaganda and from the acquisition of new members in the past, the redoubling of the efforts of each member on the above-mentioned idea.
- (3) The making of desperate efforts to induce the Manchus working in the " collective farms " established in districts along the North Manchuria Railway and in the lower reaches of the Sungari and other places where communication facilities are good, to strike and to instigate the masses to start demonstrations.
- (4) By the adoption of a policy to bring about the elimination of the " usual deplorable confusion " at the end of the fiscal year of the Manchu merchants, the making of efforts to establish complete harmony between the Manchu and Korean masses. Actual facts and actual conditions shall be explained to the working and peasant classes in order to guide their efforts along channels leading to the elimination of the year-end confusion.
- (5) The maintenance of special communication between the " cells of Communist organization " in various hsien along the Manchoukuo-Korean border.

It is believed that the above tactics indicated the policy of the Committee of the Manchurian Provinces enforced until recently.

In observing the present stage in the development of Red activities in Manchuria, the new tactics, adopted after the Manchurian Incident, were employed from the latter half of 1933. Owing to the strict control maintained by the Japanese and Manchoukuo authorities, no such progress as exaggerated in Communist propaganda, has been made by the Reds. The guerilla warfare activities of the Communist bandits have, however, seriously disturbed peace and order in the Chientao district.

A review of the activities of the Communist Party in Manchuria shows that the 32nd Red Army, which, following its organization in Panshih in 1932 was renamed the Northeastern People's Revolutionary Army, bribed bandits in various parts of the country and, supplying them with arms and ammunition, encouraged them to disturb public peace. The bandits were also instigated by insubordinate Koreans. Starting the movement of peasants in the Tangyuan, Chuho and Panshih districts in the autumn of 1933, the Communist Party organized a Peasants' Committee to prepare for a campaign against the levy of taxes. In cities, the Communist Party formed among those engaged in various enterprises, factories, schools and organs of public opinion " extensive cells of Communist organization." Such " cells " were formed in Harbin, Mukden and Dairen and their suburbs. This was revealed as a result of the arrest of some members of the Communist Party.

At present the Committee of the Manchurian Provinces is concentrating its efforts on the launching of Red partisans upon a program of destructive activity. It is estimated that there are roughly thirty thousand Communist bandits in Manchoukuo. They were most active during July and August, 1934, in districts along the former North Manchuria Railway. During those two months hardly a day passed without derailments, attacks upon trains or demolition of bridges and stations. However, with the progress of bandit eradication through the co-operation of Japan and Manchoukuo, the Communist bandits who had lost their " principal pillar " as a result of the transfer by Soviet Russia in March 1935, of the North Manchuria Railway to Manchoukuo, now find themselves in an increasingly difficult position.

Concerning the recent situation of the Communist Party in Manchuria, detailed information is unavailable owing to lack of accurate material. The following extracts from " Active Comintern Representatives on the Manchoukuo-Soviet Frontier," written by Hakuzo Hiratake, in the December issue of *Chuo* (Continued on page 319)

*By " collective farms " are meant the Japanese agricultural settlements.

Soviet Submarines in the Far East

By ALBERT PARRY and ALEXANDER KIRALFY

(The following article is taken from *Pacific Affairs* of March, 1937. Albert Parry is a Fellow of the Department of History, University of Chicago, and an authority on Russian and Far Eastern affairs. Alexander Kiralfy is of Paramount Pictures, Inc. He is an associate member of the U.S. Naval Institute and an authority on international naval problems).

IN recent months the Soviet Union has been sending submarines to Vladivostok, at the end of the Trans-Siberian railway and on the shore of Japan's most personal sea. Soviet surface ships being admittedly weak in numbers and fighting quality, this vigorous submarine base becomes practically the total sum of Soviet naval strength in Pacific waters. Next to the air fleet, capable of attacking the cities of Japan, the submarine squadron is potentially the most spectacular and most significant weapon of the Soviet Union in the Far East; but while much has been said and written about the possible function of the Soviet air fleet, the significance of the underwater weapon is not yet known. The question naturally arises, therefore, of the rôle which Soviet submarines might play in the event of a conflict with Japan.

The strategic value of submarines, apart from taking advantage of fortuitous opportunities against larger Japanese warships, would be in their ability to tie up Japanese shipping and transports, and thus hamper the landing and supplying of armies on the Asiatic mainland. The narrow seas dividing the Japanese Empire from the Pacific coasts of the Soviet Union suggest that Soviet submarines would have to operate at and beyond the five exits of the Sea of Japan. These are known as the Strait of Tartary, the Strait of La Pérouse, the Strait of Tsugaru, the Straits of Shimonoseki and Bungo, and the twin Straits of Tsushima.

The Strait of Tartary, though conspicuous on the map, is in fact only a shallow stretch, with some 25 feet of water in the deepest channels. There are places where, at low tide, it can almost be crossed by a man on stilts. At the narrows it is 10 miles and less across, and the ice sometimes remains for four months of the year. The strait is too far north for the Japanese to use it to bring troops and supplies to their operating land bases in Korea and southern Manchuria. They might, however, resort to it in case of an attempt to invade Siberia from the Amur delta, which is at the northerly entrance of the strait. The fate of this exit would depend largely on the action of Japanese land forces on Sakhalin Island. If they were to capture the northern part of the island, belonging to the Soviet Union, they could certainly command this strait, closing it to all but their own shipping. Even with the Soviet Union commanding both sides of the strait, their submarines would find it but a swamp. Also, it might happen that at the most urgent moment of fighting on land, with need for support from the sea, the strait might be closed to both Soviet and

Japanese forces by natural conditions. This was demonstrated during the Russo-Japanese war of 1904-05, when the Vladivostok squadron of cruisers—the only part of the Russian naval force that found itself comparatively free and successful—could not start its activities until the Strait of Tartary was clear of ice, and thus available as an emergency exit.

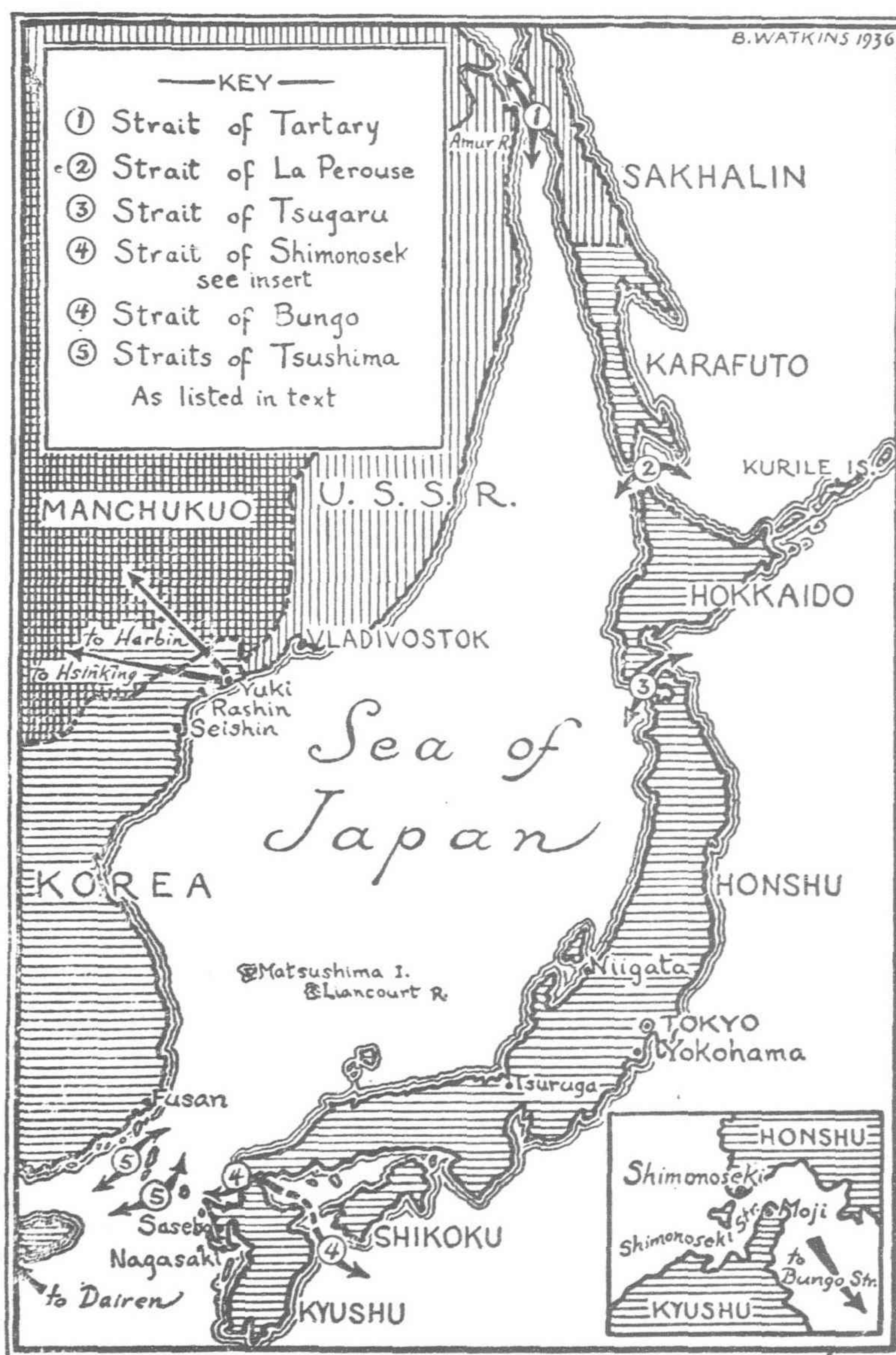
To the south there is the Strait of La Pérouse. It has Japanese territory on both sides, but is 30 miles wide and from 150 to 200 feet in depth, thus offering a fairly satisfactory exit for Soviet submarines wishing to get out of the Sea of Japan. However, on the other side

of this strait there are the bleak but swarming Kurile Islands, upon which Japan could base light naval forces. Soviet submarines would have to run the gauntlet of those islands and forces in order to use this strait to get out into the Pacific and prey upon Japanese shipping in the open ocean. The Strait of La Pérouse is less satisfactory as a route to the waters south of Korea. The distance from Vladivostok by this route is 2,500 miles. In 1904 the Russian cruiser *Norik* tried to use the strait, but was brought to action, had a series of epic encounters and escapes, and finally ran aground inside the strait; but submarines might not be detected and captured as easily.

Then there is the Tsugaru Strait, 500 miles from Vladivostok. It is 10 miles in width at both entrances, with depths varying from 100 to 600 feet, and with a run-through of 75 miles. There are Japanese naval stations at both ends, and a submarine base in ideal land-locked waters within the strait, which is 30 miles wide at this particular place. Although the passage of the Tsugaru Strait would be tempting for Soviet submarines, it is well defended and therefore dangerous. Japanese coastal hydrophones could give ample warning of the appearance of a hostile submarine. The strait was not always as well defended as it is now, for in the Russo-Japanese war the Vladivostok cruisers appeared off it,

sank a small ship, made their sortie through the strait and cruised down the Pacific until they approached Tokyo Bay. Off this bay they captured nine ships, thus delaying 200,000 tons of shipping from Japan, particularly at Yokohama. They returned to their base by the same strait.

This leaves for consideration the southern exits of the Sea of Japan. Strategically these are the most important, for in case of war the principal Japanese communications would be between their southern ports, such as Nagasaki and Sasebo, and certain ports in south and west Korea and southern Manchuria, such as Fusan and Dairen:



The Strait of Shimonoseki is a narrowing passage just before the Straits of Tsushima. It was forced by American and European armed ships at the time of the opening of Japan to foreign intercourse, but a naval attack in modern times would be suicidal. The strait is too narrow. An island before the city of Shimonoseki causes it to shrink to about a mile in width, while outside the town, at Cape Mojisaki, there is less than a half-mile of waterway. The only chance of passage for hostile submarines would be in imperfect hydrophone detection due to domestic traffic in these waters, including the Shimonoseki-Moji ferry. Beyond the cape, the water widens into several bodies, and before the Pacific is reached there is another narrows to be passed, that of Bungo Strait. The experiences involved in making such a submarine passage may be likened to the stealing of the British *E-8* into the Baltic during the last war; passing brilliantly lighted cities, lying for hours in shallow channels, touching ground beneath, and just missing the keels of ships above. Yet the narrowest stretch in this British adventure was as much as three miles.

Thus we come to the main exist of the Sea of Japan: the twin Straits of Tsushima. The world remembers this name because it was here that in 1905 Admiral Togo destroyed the Baltic fleet of Admiral Rojdestvensky on the last lap of its ill-starred journey half-way around the world. The Straits of Tsushima pass on both sides of the island group of the same name. Each of them is 25 miles wide. The depth in the western channel is from 200 to 600 feet, and in the eastern from 300 to 400 feet. There is a Japanese submarine base in the islands. Their principal base, Sasebo, is just without. The Straits of Tsushima are the widest and deepest of all the Sea of Japan outlets. Tsarist Russia long desired these waters. As early as 1861 it attempted to annex the islands but was thwarted by both Japan and England. It was here that in 1904 the Vladivostok cruisers made their greatest killing. Under cover of fog they missed the squadron of Japanese cruisers sent to deal with them. They made what was probably the first attempt to "jam" the wireless signals of an enemy, thus silencing a light cruiser that had discovered them. Then they sank two ships and disabled a third. One of the ships sunk had on board a thousand Japanese soldiers and, most important, eighteen of the famous 11-inch howitzers destined for the siege of Port Arthur. The moral effect of this raid was such that the Japanese admiral immediately ordered a stoppage of all traffic. Meanwhile, the Russians made off in the direction of the Tsugaru Strait, where they seized a ship carrying railroad materials, and then returned to Vladivostok.

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THE region of Tsushima might be expected to serve as the main theater of Soviet submarine warfare. Besides being the most effective outlet from the Sea of Japan, it is the most convenient route between Japan and the mainland of Asia, and is only 650 miles from Vladivostok. It would take a submarine only two days to travel the distance on the surface, at the fairly low speed of 15 miles an hour, and not much under three days if running submerged about half the time at 10 miles an hour. It is here, also, that the Japanese can be expected to lay their most formidable barrage against the Russian submarines. The question is therefore whether the Tsushima exit would serve as a trap for Soviet submarines instead of as the scene of their triumph. While means of defense have improved both since the Russo-Japanese War and the World War, so has the submarine. We may safely say that the relative offensive strength of submarines and of defense systems against them is about the same as it was during the World War.

Let us look to the lessons of that war. There was, for instance, the famous Dover Barrage, which accounted for more U-boat losses than all the other barrages put together. Between Folkestone and Cape Griz Nez the distance is 22 miles. Half the distance across, the strait is less than 100 feet deep, and on the French side it drops to about 150 feet. This comparatively narrow and shallow strip of water was sown with mines, and continually patrolled. Powerful searchlights played upon it nightly from both sides. There were also floating lights, detectors and mined nets, and flotillas of destroyers close at hand, supported if necessary by aircraft. The fact is that, in spite of all this, U-boats were successful in passing through, which means that even the closest barrage system cannot be permanently and continually effective. Moreover the waters at the approaches to the Dover passages are shallow, while between Vladivostok and Tsushima the Sea of Japan is bottomless, as far as submersibles are concerned, dropping dizzily to 10,000 feet and more.

In the World War, on the shoal coast of Flanders barrages were laid 25 miles offshore, in from 12 to 50 feet of water, and were so inefficient that blockades against Ostende and Zeebrugge had to be attempted. Even these carefully planned measures were defeated by the tides and currents. The Otranto Barrage, at the heel of Italy, took five months to make; it was 50 miles across, but with depths varying from 1,000 to over 3,000 feet, and the U-boat losses there could be counted on the fingers of one hand. Gibraltar, it is true, was not mined, though its brief dozen miles were well patrolled yet only two German submarines were caught there. The gullet of the Dardanelles is but 200 feet deep and less than a mile across, yet the Allied submarines penetrated the narrows. They became enmeshed in nets but wiggled about and succeeded in escaping.

By the end of the World War the means of defense against submarines were improved to the point of the ambitious North Sea Barrage. It stretched from the north of Scotland to the Norwegian coast and was the work of eight months. The waters here are deep, and the "fields" were set at different levels over a width of 15 to 35 miles, armed with the supposedly deadly antenna mines. These mines were anchored 50 feet apart, which was considered a fatal distance, and had antennae stretching toward the surface, contact with which set off the 300-pound charges. Of such mines there were some 70,000 but only six submarines are known to have been lost in these meshes, and German submarine commanders returning from the North Sea Barrage merely reported hearing "mysterious explosions," and this was all that they knew as a result of coming into contact with the mighty antennae.

The present-day submarine has a better chance of escaping even that contact and hearing that sound. Submarines in the World War were designed to submerge safely to 200 feet, although they could and did in emergencies sink to 300 and, in cases, to 400 feet. To-day submarines are tested at 300 to 400 feet as normal and can consequently, should the need arise, go proportionately lower. In the deep waters of the Sea of Japan, with the considerable leeway in four directions, Soviet submarines would have little to fear in rapid dives or "crashes." On the other hand, the waters of the Tsushima region are shallow enough to give the hostile submarines a chance to escape detection or pursuit by lying concealed anywhere within the straits, except in one 600 foot "deep" which lies in a band off the northwest coast of the main Tsushima island, parallel to the straits. Even this deep could be used by Soviet submarines as a safety area in which to shake off a pursuit that had grown too hot in shallow water.

There are other natural advantages that favor the use of Soviet submarines in the Far East. The maneuver of stealing out of their Vladivostok base unobserved by the enemy would be facilitated by the fogs which occur here half of the time during the four summer months. Their operation against Japan's most vital route of communication with the mainland would be assisted by the fact that the waters of the Tsushima Straits are warm. This is an important consideration, because submarines have no facilities for heating; electricity is the life-blood of underwater navigation, and other fuels consume oxygen, which cannot be spared. Nor should the typhoons be forgotten. They are frequent in the Sea of Japan, but not off Vladivostok; they prevail in the Tsushima waters almost a third of the year, including the entire winter. While hampering the surface shipping of the Japanese these storms would be no terror to submarines, which can avoid typhoons by diving, as the motions of even a 30-foot wave are hardly felt at a depth of 60 feet. Again, the cold Oyasiwo current, which passes through the western channel of Tsushima, is muddy in color and thus makes detection of a submarine more difficult.

However, not all the advantages are on the Soviet side. There are also certain advantages to be noted for Japan, such as the Matsushima Islands and the Liancourt Rocks, which stand like outposts on the direct course from Vladivostok, some 250 miles short of the Tsushima Straits. Matsushima Island is but six miles across, and has no inlets suitable as bases for destroyers or patrols. Its surface is covered with steep wooded hills, culminating in a mountain 3,200 feet high, and is therefore of no use for Japanese aircraft; but spotters posted on its heights command, theoretically, a sea-circle of 50 miles in radius. To escape the glasses of lookouts posted on this island, as well as on the 500-foot heights of the Liancourt Rocks, Soviet submarines would have to be careful to give these Japanese outposts a wide surface-berth in fair weather.

The Japanese could make extensive use of the convoy system. During their naval maneuvers off Osaka in 1934 they practised

convoying merchant ships, with destroyers laying a smoke screen as a protection against aircraft. As Soviet submarines would be operating so far from their bases they would have to be extremely cautious in avoiding Japan's 100 destroyers. Their important weapon, therefore, would be the mine. But in that event the sea areas involved would have to be divided among the available Soviet submarines. Russian aircraft, no matter at what cost, would have to be continually scouting for changes in convoy lanes, and thus guide the submarines. Without the air eye, submarines would be blind and dependent more on fortune than science.

To offset the rôle of Vladivostok not only commercially but strategically as well, the Japanese have within the last few years developed Rashin, an erstwhile fishing village on the northeast coast of Korea, into a splendid port. Its subsidiary ports are Yuki and Seishin, nearby, lacking Rashin's excellent natural harbor, yet able to take care of smaller vessels and, like Rashin, having direct rail connections with Manchoukuo's inland provinces. These railroads, built in much secrecy under military supervision, provide short cuts not only to Hsinking, Manchoukuo's capital, but also to Harbin, making possible a quicker concentration of Japanese troops in northern Manchoukuo than if they had to go by way of Dairen. The saving in time is estimated to be from two to three days. Together with other Japanese-built or controlled railroads in Korea and Manchoukuo, these lines may contribute to as complete a ring around Vladivostok as the Japanese were able to throw around Port Arthur in 1904. The naval and aircraft base at Vladivostok may be paralyzed or seriously hampered early in the war also because Rashin, only about 150 miles from the Soviet port, may become (if it has not already become) a strong military port with warships riding at anchor and airplanes ready to take off at a moment's notice, to check the submarines and planes of the Soviets.

But here, too, there are drawbacks for the Japanese: while Rashin is some 200 miles nearer Japan than is Dairen, the sea route to Dairen is mostly by way of the Yellow Sea and thus better protected than the 400-mile open route across the Sea of Japan from the west coast ports of Niigata and Tsuruga to Rashin. It was to provide communication between these west coast ports and the Asiatic mainland that the Rashin-Yuki-Seishin trio was developed. However, it is probable that as points of landing for a Japanese expeditionary force the three new ports would stand at the end of the Japanese route from the Tsushima Straits as well as from Niigata and Tsuruga; but the more southerly route is fully as long and only a little less exposed to possible attacks on the part of Soviet submarines.

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THE total balance of all factors would appear to favor the Soviet Union in a submarine offensive against Japan—always provided, however, that the submarines were used with adequate skill. It has to be remembered that about 80 per cent of the damage done by German submarines during the World War was the work of about 10 per cent of the submarines engaged. In order therefore to make even one submarine out of ten effective, the Soviet Navy would have to equal the very high technical proficiency of the German submarine service. The Russians historically are an inland people with only a weak tradition in the handling of big ships in great waters. The very weakness of their capital ships early compelled them, however, to seek underwater methods of defending their shores. Undersea mining by means of torpedo boats was one of these methods. In 1877 it was the torpedo boats of the Russians that delivered their successful blow against Turkish monitors; and the only capital ships lost by Japan in the war of 1904-05 fell victims to Russian mines. Russia was one of the first powers to give hearing to inventors of submarines, to arrange for their demonstrations, and to give them orders. Long before the Germans and British, the Russians knew the art of shipping a submarine all-rail, in sections, to be assembled upon reaching a port. Their first large submarine was constructed at Kronstadt in 1902, in nine sections, to be sent all-rail to Vladivostok, for the defense of Port Arthur; though it was finally shipped by rail to the Black Sea. Other submarines were later sent in sections to Pacific waters, though they did not reach the Pacific until after the Russo-Japanese war. When the World War broke out, those that were most serviceable were once more taken apart and sent by rail back to the Baltic, like salmon returning to their place of birth.

Apparently it was the rumor of these ships, shuttling back and forth over the Siberian railroad, that accounted for reports

of Russian submarine warfare against Japan in 1904-05. Actually, no Russian submarines took part in that war; they were allowed to lie in sections at various railroad sidings. This may have been partly due to the distrust of submarines then current; a prominent English admiral and author commented at the time that the idea of submarines constituted a step back rather than an advance in naval strategy. It was in the World War that the Russians had their first real chance to use submarines. Though few in number, they were able to inflict some damage upon the shipping between Germany and Sweden. The exploits of *Volchitza* (*The She-Wolf*) in 1916 were the most notable. Many submarines were built in Russian plants during the war, the last of them being finished as late as 1917. In April 1919, threatened by an invasion of the Red troops, the White Guard generals together with their French allies sank a number of Russian submarines off Sebastopol, the base of the Russian Black Sea Fleet, lest they fall into the hands of the Soviets.

Only four were saved by White officers. In the autumn of 1920, after General Wrangel's defeat, they accompanied his fleet of men-of-war and merchant ships, crowded with the remnants of his army and their families seeking refuge in Constantinople. While the entire fleet was allowed to enter the Bosphorus and the Golden Horn, then occupied by the Allies, the submarines were compelled to stay outside these waters for three days. The order was issued by the British, who were said to be in fear of them. The reputation of these undersea craft and their crews was apparently so imposing that during this wait they were flattered with offers from various governments and armies, all eager to add the ships and crews to their rolls. Kemal Pasha, then fighting the Greeks in Asia Minor, offered the Russian submarine commanders ample salaries in gold, together with the possession of any Greek ships they might capture, if only they would bring their four ships to his service. The Russians declined, planning to join the forces of Yugoslavia, but finally France took over all four submarines, on the excuse that Wrangel owed them money advanced to him to fight the Soviets. According to the latest reports, three of these ships are now in Bizerta, North Africa, held by France in escrow for Russia.

The civil war over, the triumphant Soviets salvaged and repaired some of the old submarines (among others, the British *I-55*, sunk by a Soviet mine or destroyer in the Baltic, near Kronstadt, in 1919), and began the construction of additional vessels. Until Hitler's ascent to power it was rumored that German plants, or at least German engineers and materials, aided in this construction. Exact figures as to the present-day Soviet submarine force are lacking, but on January 30, 1935, Mikhail Tukhachevsky, Vice-Commissar for Defense, speaking before the All-Union Congress of Soviets, stated that within the last four years the Soviet submarine tonnage had been increased 435 per cent. This would mean an addition of some 40 submarines to the 17 older Soviet submarines as reported in *Brassey's Naval and Shipping Annual* for 1935, or about 57 submarines all told. On November 28, 1936, Nicholas Orlov, chief of the naval forces of the U.S.S.R., announced to the All-Union Congress of Soviets that since 1933 the number of Soviet submarines had been increased 715 per cent. Foreign experts in Moscow commented that, at the lowest, the Soviet navy had some 20 submarines in 1933, and this would make a 1936 total of 145. Other estimates are less conservative. Admiral Orlov added in his speech that the Soviet submarine fleet, the Pacific as well as the Baltic, was now faster and able to remain submerged longer than any other in the world.

But what effect, if any, would these submarines have on the final outcome of a war between Japan and the Soviet Union? Could submarines decide a war in the Far East, as they almost did the World War? They might not decide it outright, but they could be responsible for preventing Japan from forcing a quick decision. In 1904-05, the prolongation of the war was fatal to Russia, chiefly because that war was not popular with the Russian masses. The delay only aggravated the people's dissatisfaction and made Russia's defeat the more certain. Now, on the contrary, the Soviets believe that among the Russian people a war against Japan would be supported to the end, because it would be regarded as a vital defensive war. Moreover, the Far East is no longer far removed and detached from the rest of Russia as it was 30 years ago. The Trans-Siberian railway was then new, and had not yet proved its worth in bringing eastern Siberia close to the rest of the country. The Russian Far East was not yet an indissectable part of Russia.

In 1914-16 the Siberian troops came west to fight together with the European Russians on the German front, quickly winning admiration as the Empire's best fighters. In 1918-20, troops from European Russia came into Siberia to help the Siberians regain their land from Kolchak for the Soviet Republics. They marched all the way to the Pacific shores, where they now stand. All this has happened since 1905, making for a new and strong bond between Siberia and the rest of the country. The fact that it is the Soviet Union and not the Czar's Russia that they will be fighting for, can be counted on to enhance solidarity in case of war. Again, there is the Soviet belief that while in 1904-05 it was Russia that by its imperialism in Manchuria and its threat to Korea brought the war about, it is now Japan that stands conspicuous and unmistakable as the aggressor.

A protracted war would, therefore, favor not Japan but the Soviet Union, which in its struggle for existence has so far counted time as its infallible ally. Preventing the White Guards and interventionists from capturing Moscow in the first year of the civil war was actually three quarters of the battle won by the Soviets. Time was enough to show the peasants of Russia that the White Guards were coming to return land to the nobles; the peasants sent their sons to join the Red army not for any far-removed ideas of communism, but to save their land from the noblemen. The

Soviets now believe that failure to reach a decision in the Far East during the first year of war would bring to a head the incipient social unrest in Japan and the well-known dissatisfaction among farmers, workers and students. In Japan, they believe, a war would be popular for only the first few months, perhaps the first year, but no longer: so that if the Soviets, with the help of their submarines, could prolong the war until then, the victory would be theirs.

The submarines, finally, might help to reverse the relative efficiency of communications which prevailed in the Russo-Japanese war. In 1904-05 Russia lost because, among other weighty reasons, its Trans-Siberian line had but a single track. Even this was not quite completed: the service was poor, and much time was lost in sending reinforcements and supplies to the front. Now there is a double track throughout, and there are additional lines falling into it from different directions, notably the Turk-Sib railroad connecting Turkistan with Siberia, and the recently completed sub-arctic line north of Lake Baikal. The exposed sea-lane of Japan's communication with the mainland of Asia, on the other hand, may prove to be as uneasy a link as was the Trans-Siberian in Russia's scheme of preparedness and fighting in 1904-05. In exploiting any such weakness, the decisive part would fall to the submarine forces of the Soviet Union.

Electric Enterprises in China*

KEEPING pace with the progress in other industrial undertakings, China has achieved remarkable strides in electric reconstruction during the past ten years. According to statistics compiled in 1935 by the National Reconstruction Commission, the number of power houses in the country was given as 456 with a combined capacity of 585,424 kilowatts and a total current production of 1,568,000,000 units. These establishments represent an aggregate investment of \$301,000,000 and a yearly revenue of \$96,000,000. Of the total population in the country, about seven per cent are provided with the facilities for using electricity, the average consumption per capita being 3.7 units. Viewed in the light of power capacity, there have been added a total of over 30,000 kilowatts in recent years while no less than 120,000 kilowatts are now being added. The production of electricity also registered a marked increase. Recent investigation reveals that the total output during 1936 reached 1,740,000,000 units, showing a gain of 11 per cent over the figure for the preceding year.

Of the 456 power concerns mentioned above, ten were founded on foreign capital. These are mostly located at foreign concessions and are, therefore, not amenable to the electric ordinances promulgated by the Chinese Government. As for the remaining 446, 23 are owned by the Government, five by joint Government and private enterprises, four by joint Sino-foreign interests, and 414 by purely private interests. Judging from this figure, it may be observed that private-owned electric companies account for by far the largest number. While the number of foreign-owned power houses is not more than ten, they nevertheless wield a tremendous influence over the development of the electric enterprises in the country. The combined power capacity of these concerns comes in for as much as 47 per cent of the total, the annual power production 58 per cent, and the amount of investment 62 per cent. As a whole, most of the electricity companies generate current for their own consumers and those wholly dependent on drawing their requirements from other power suppliers or obtaining a portion of electricity therefrom to make up their deficiency total but 30.

In point of the magnitude of the various power concerns, the number of larger electric plants with a generating capacity of upwards of 1,000 kilowatts was 51 or about 11 per cent of the total. Nevertheless, as far as power capacity is concerned, they share no less than 93 per cent and as for the power production, 96 per cent. The following tabulation shows the general conditions of large electric plants during the past few years:

	Number of Plants	Power Capacity (kilowatts)	Output of Current (units)	Investment	Receipts
1932	33	236,464	434,000,000	\$111,577,000	\$39,864,000
1933	34	251,495	521,000,000	99,252,000	44,761,000
1934	40	269,054	591,000,000	107,680,000	50,039,000
1935	43	309,669	662,997,000	113,647,000	58,309,000

Owing to the fact that many electric companies usually obtain their supplies from other power houses for their consumers, the total consumption of current for the year 1936, which amounted to 1,574,000,000 units, was slightly over the amount of production. Of this quantity, 25 per cent was used for lighting and 57 per cent for power purposes while the balance represented losses through the building of connections. The table hereunder shows the production of electricity during the past 10 years:

Annual Output (units)			Annual Output (units)		
1926	751,000,000	1931	1,287,000,000		
1927	772,000,000	1932	1,195,059,000		
1928	882,000,000	1933	1,411,816,000		
1929	1,017,000,000	1934	1,541,375,000		
1930	1,112,000,000	1935	1,568,737,000		

As regards the conditions of the electric enterprises in the different provinces, Kiangsu, Kwangtung, Chekiang, and Hopei have made by far the greatest progress. Particulars of the electric enterprise in the various provinces are shown in the following list:

	No. of Plants	Capacity (kilowatts)	Production (units)	Capitalization	Business Turnover
Kiangsu	108	105,628	251,844,000	\$41,500,000	\$22,855,000
Chekiang	105	32,811	45,073,000	13,038,000	4,695,000
Anhui	29	4,762	7,781,000	2,164,000	898,000
Fukien	27	11,369	22,897,000	5,247,000	1,975,000
Kwangtung	38	36,798	109,424,000	10,677,000	9,327,000
Kwangsi	12	2,858	4,250,000	1,273,000	502,000
Yunnan	2	1,852	4,140,000	2,331,000	116,000
Kweichow	1	150	373,000	88,000	33,000
Hunan	11	6,808	15,057,000	1,829,000	1,223,000
Hupeh	16	19,846	59,721,000	4,930,000	3,163,000
Kiangsi	12	3,257	4,967,000	1,163,000	907,000
Szechuen	22	5,176	7,691,000	3,836,000	1,274,000
Sikang	1	25	40,000	21,000	7,000
Kansu	4	151	357,000	90,000	79,000
Shansi	8	5,534	6,529,000	1,767,000	514,000
Honan	7	2,056	2,788,000	1,400,000	417,000
Shantung	22	41,989	67,040,000	5,109,000	3,867,000
Hopei	16	27,479	49,950,000	16,260,000	6,067,000
Chahar	1	385	686,000	245,000	108,000
Suiyuan	2	608	2,231,000	596,000	282,000
Tibet	1	100	158,000	83,000	—
Total	456	585,424	1,568,778,000	301,647,000	95,709,000

In the following are separately reviewed the detailed conditions respecting the electric industry in the various provinces and municipalities:

* Chinese Economic Journal

Kiangsu and Chekiang

Probably in no other provinces in China has the development of the electrical industry been so rapid and spectacular as in Kiangsu and Chekiang. In Kiangsu alone, there are no less than 118 power plants while in Chekiang 117, making a total of 235 which occupies more than half of the number of electric concerns in the whole country. In respect of generating capacity, Kiangsu and Chekiang share about 60 per cent of the total and of the quantity of current produced about 70 per cent. Most of the large plants in Kiangsu are found in Shanghai and Nanking, as barring these two localities, the position of Kiangsu is below that of Kwangtung or Hopei.

Electric enterprises in Kiangsu and Chekiang, though different in other respects, are characterized by one common and striking feature—the existence of a large number of small power houses in one district. Generally, there are five or six small electric plants in operation in one hsien, each supplying to the needs of a different section of the district. As a consequence, keen competition is inevitable which, coupled with inefficient management, has caused many of these small plants to cease generating electricity and to either purchase their supplies from or amalgamate with the larger power plants nearby.

In the following are briefly recounted the larger power companies in these two provinces:

Capital Electricity Works.—The Capital Electricity Works, was formerly the Nanking Electric Lighting Company founded by the Kiangsu Provincial Government in 1911. When the National Capital was removed to Nanking, the company was taken over by the Nanking Municipal Government. During that time, the power house was capable of producing only 820 kilowatts for the use of some 3,000 consumers. As a consequence, overloading was frequent and proved to be a serious problem. Not until 1928 when the concern was placed under the direct control of the National Reconstruction Commission were improved conditions in evidence. With the new management assuming office, steps were taken to augment the generating capacity of the plant so as to meet the growing needs. New generators were installed and a strict vigilance was kept over the making of surreptitious connections with the result that the business revenue of the Company has been rising considerably in the past few years. In 1931, further improvement in the readjustment of the company was made as the Hsihuamen Power Station was merged with the Hsiakuan Power Station which had been chosen as the center of activity and in which two 5,000-kilowatt steam generators were installed.

With the population of Nanking steadily increasing, the supply of electricity by the Works was found inadequate to meet the heavy demand and in order to fulfil the growing requirements, two 10,000 kilowatts generators were later purchased and put into operation in 1936, thus bringing the total capacity up to 32,000 kilowatts. But seeing that the demand for electricity will undoubtedly become greater with the increase of population in the Capital, the company has drawn up measures for the construction of a huge plant with a capacity of 50,000 kilowatts. At present, there are a total of over 40,000 consumers, indicating a ten-fold increase as compared with ten years ago. Increases in business receipts as well as the power output have also been evident. For the year 1935, business revenue was reported to have amounted to \$2,700,000, while the total production of electricity for the year came to 50,000,000 units supplying to four surrounding districts, namely, Pukow, Lungtan, Tangshan and Tungshancheng, in addition to the municipality itself. The aggregate investment to date is estimated at over \$6,400,000.

Chisuyen Electricity Works.—The Chisuyen Electricity Works, located at Chisuyen, a small town not far away from Wuchin, was formerly known as the Chen Hua Electric Company organized by Sino-German interests. This company started to supply current in 1923, but as a result of adverse business conditions, sustained heavy losses. The turning point, however, was finally in sight in October, 1928, when the National Reconstruction Commission, with the object of readjusting the company, dispatched a petition to the National Government urging to have it converted into a state-owned enterprise. This request was eventually acceded to and for the purpose of establishing government ownership, the National Reconstruction Commission was authorized to float bonds for the liquidation of the stocks held by the former shareholders. Since the Government took over the management, a marked improvement

in business has been made resulting in a substantial increase in business receipts. Simultaneously, there has also been observed a gain in the power production as well as the number of consumers. During the past eight years, the number of lighting consumers, now 15,000 in all, has registered an advance of about one-fold, the amount of current produced over two-fold, and the generating capacity three-fold.

Equipped with a total of four electric generators, having a combined capacity of 17,000 kilowatts, this establishment supplies electricity in two different routes, one to Wuchin and the other to Wusih. Business is mainly dependent upon the sales of electricity to the various factories in those two cities. The sales of current for power during the year 1935 totalled no less than 30,000,000 units which amount is eight times more than that supplied for lighting purposes. To further expand its services, the company is contemplating erecting, by the side of the Taihu Lake, a new power station to be equipped with 15,000 or 20,000-kilowatt generators. Concurrently with these efforts, preparations for the building of connection with Tanyang are being rushed while the installation of another line conveying current of Ihsing and Liyang also gets under way.

Hangchow Electric Company.—Being the largest power plant in Chekiang, the Hangchow Electric Company was, in former days, known as the Ta Yu Li Electric Company, which was taken over by the Chekiang Provincial Government in 1929. With the change of management, much effort had been made to build a new power house at Zakow as well as to devise a project for a network of electric plants to supply the entire province. However, owing to financial stringency, this project failed to realize and the company was later sold to the Chi Hsin Banking Syndicate in 1932. In spite of the change, the Zakow new plant with a capacity of 15,000 kilowatts was finally completed in 1933, and has since been supplying to the needs of Hangchow, the two old power stations at Panerhsiang and Kenshanmen having been suspended.

Soochow Electric Company.—During the last decade, a steady progress has been made by the Soochow Electric Company in the improvement of its power generation. Apart from the merger with the Cheng Hsing Power House and the increase in capital, the company has developed and expanded until now it may be credited with a power capacity of 12,000 kilowatts supplying to the needs of various neighboring areas such as Wangting, Kunshan, Wukiang, Shengtseh and Wusih, besides the rural districts around Soochow.

Shanghai

Being the largest industrial and trade center of China, Shanghai has made the greatest and most rapid progress in the development of electric enterprises unparalleled by other cities in this country. Supplying electricity to the different districts of this great metropolis are seven power companies scattered in three different administrative areas, namely, the Greater Shanghai Municipality, the International Settlement, and the French Concession. These concerns represent an investment of \$187,000,000 and an annual revenue of \$43,000,000. The combined capacity of these companies totals 300,000 kilowatts accounting for half of the amount for the whole country. The per capita consumption of current in this city averages 242 units, being the highest figure recorded among the cities in China. The annual power produced by these concerns totals no less than 939,000,000 units representing half of the amount produced in the entire country. Of these seven electric companies, one is operated by American interests, one by French interests, and one by Sino-American interests while the remaining four are under Chinese management. In so far as equipment and power capacity go, the premier position is indubitably represented by the Shanghai Power Company which is considered the largest as well as the most elaborately-equipped electric works in this city and from which many other power concerns used to purchase current for their own consumers. A brief account of the various electric companies in this city is separately given below:

Shanghai Power Company.—The Shanghai Power Company, formerly the Electricity Department of the Shanghai Municipal Council, was organized in 1929 through the purchase of the Electricity Department from the Shanghai Municipal Council. Affiliated with the Far Eastern Power Company, this establishment owns the largest power house in China, having a generating capacity of

183,000 kilowatts and a maximum load of 135,533 kilowatts. Its total assets are estimated at about \$173,520,000 and there are at present 76,705 consumers. According to records, the amount of current produced in 1935 totalled 759,906,000 units and business receipts for that year \$25,366,000. During the past ten years, a noticeable improvement in the supply of current by this company has been observed. The relay of current has increased from 139,000 kilowatts to 318,000 kilowatts and the sales of electricity from 294,000,000 units to 720,000,000 units, showing more than a two-fold increase respectively.

Campagne Francaise de Tramways et d'Eclairage Electrique de Shanghai.—Founded by French interests with a capital of 20,000,000 francs, this company owns the largest Diesel-engine plant in the Far East, having a power capacity of 28,320 kilowatts and supplying to the needs of the French Concession. Records of 1935 showed that the total production of current for the year amounted to 46,898,000 units and electricity purchased from other producers 6,488,000 units. Business revenue for the year in question was about \$4,000,000. At present, there are a total of 33,586 consumers.

Western District Power Company.—The Western District Power Company was established on a paid-up capital of \$3,000,000 by Sino-American interests, being affiliated with the Shanghai Power Company which holds 51 per cent of its shares. By special arrangements with the City Government of Greater Shanghai, this concern supplies electricity exclusively to the extra-Settlement Road area. However, as it has no power station of its own, it has to purchase requirements from the Shanghai Power Company for its consumers. Electricity obtained from this source during 1935 totalled 148,940,000 units of which 95 per cent were supplied for power purposes. According to records, the business returns of this company for 1935 amounted to \$3,919,000 and the number of consumers 9,502.

Chapei Electricity and Waterworks, Ltd.—The Chapei Electricity and Waterworks, Ltd., was established in 1924 on a capital of \$2,000,000 which was later increased to \$4,000,000. With a power capacity of 22,500 kilowatts, it supplies to an extensive district covering Chapei, Kiangwan, Yinghsiangkang, and as far as Kiating and Kunshan. For the past ten years, numerous mishaps and difficulties had been encountered by this company, noticeably the damage wrought during the Sino-Japanese hostilities in 1932. Nevertheless, they have invariably been weathered successfully and to-day the company has not only recovered from the slump experienced in former years but has made a remarkable advance. For the year 1935, the total power generation amounted to 67,883,000 units and electricity purchased from other suppliers 35,186,000 units, making a total of 103,069,000 units indicating a gain of 27,946,806 units over the preceding year or about 28 per cent. Business revenue for the year in question amounted to \$4,088,000 and the number of consumers 28,075. To cope with the growing demand for a larger amount of current from its clientele, a loan of \$6,000,000 was floated by the company in 1934 partly for the redemption of its outstanding debts and partly for the augmentation of its power capacity to which has recently been added 10,000 kilowatts through the installation of a new generator in 1935.

Chinese Electric Power Company.—The Chinese Electric Power Company was brought into existence in 1918 through the amalgamation of the Inland Electric Power Company and the Chinese Tramway Company. At the beginning, the capital was but \$740,000 but was increased to \$3,000,000 in 1927 and \$4,000,000 in 1928. This amount was further augmented in 1934 by another \$2,000,000 making the new capital \$6,000,000. In addition to supplying electricity to the Nantao District as well as the surrounding areas such as Kiating, Sungkiang, Minghang and Chupu, the Company also operates a tramway service in the Nantao District. According to an investigation made in 1935, the power production of this Company for that year totalled 45,691,000 units and the amount of current obtained from other suppliers 14,021,000 units. The net receipts for 1935 amounted to \$4,152,000 which bettered the previous year's figure by \$354,800. At present, there are 48,587 consumers in all of which over 43,000 are lighting consumers. To cope with the growing requirements for more electricity, an expansion program is now being launched by the Company aiming at raising its capacity by 30,000 kilowatts.

Pootung Electricity Company.—Inaugurated in 1919, the Pootung Electricity Company has, since its establishment, persistently developed in amazing proportions. For the past ten years, the capital has increased from \$300,000 to \$1,000,000 and the annual

receipts from \$80,000 to \$800,000. Aside from catering to a number of factories and residents in the Pootung District, this Company also supplies to the various neighboring regions such as Nanhui, Fenghsien, Chuansha, and the Shanghai hsien, the total number of consumers, amounting to 11,124. However, with a capacity of only 600 kilowatts the company cannot produce sufficient current to cope with the demand from its clientele, and consequently, a large amount of electricity has to be purchased from other power companies, especially from the Chapei Electricity and Waterworks and the Chinese Electric Power Company. In 1935, a total of 10,421,000 units were obtained this way as against its own production of 2,313,000 units. In order to establish a large power generating system, the Company is now launching an expansion program which includes the erection of a new power station capable of turning out 10,000 kilowatts of current.

Hsiang Hua Electricity Company.—The Hsiang Hua Electricity Company is located at Chapei and was founded with a capital of \$250,000. Although operated on a small scale, this Company has been doing a flourishing business in recent years. In 1935, the revenue received by this concern amounted to \$338,000 representing an increase over the previous years. This company does not generate power but draws its supplies from the Chapei Electricity and Waterworks and the Chinese Electrical Power Company for some 2,936 consumers. Records of 1935 indicated that the amount of current purchased from these sources totalled 4,864,000 units.

Hankow

Catering to the requirements of the different districts of Hankow are a total of four power companies, three of which are operated by foreign interests. The only electric concern owned by Chinese is the Hankow Waterworks and Electric Light Company, Ltd. This establishment was originally founded with a capital of \$3,000,000 which was later raised to \$7,500,000. In spite of the increase in capital, the improvements achieved by this company have been somewhat slow during recent years. Its generating power, amounting to 16,500, is approximately overtaking the highest load of the plant. Although a scheme to augment the power generation was decided upon in 1933, this project has thus far not come to pass on account of financial difficulties.

Among the three power companies under foreign management, the Hankow Light and Power Company, Ltd., is by far the largest. Established by British interest, this Company has a power capacity of 5,000 kilowatts and furnishes current to the Special Administrative District Nos. 2 and 3 of the city. The other two electric companies include one founded by Melchers & Company and one by Japanese interests, the former supplying electricity to the Special Administrative District No. 1 and the latter to the Japanese Concession in Hankow.

Wuchang

Although Wuchang is the provincial capital of Hupeh, electric enterprises in this city have not been well developed. The Ching Cheng Electric Light Company is the only electric concern supplying current to the city. This establishment was founded in 1926, but has made little improvement since its formation. For the purpose of providing an efficient electric system for the city, the Wuchang City Government was authorized to take over the plant in 1935. Aside from repaying the outstanding debts which the company had previously incurred, the new management also mapped out an expansion program which embodied the erection of a new power station in collaboration with the National Reconstruction Commission.

Hanyang

Equally undeveloped is the electric industry in Hanyang, though this city has been noted as a foremost industrial center. The Hanyang Electric Company, organized by the Chow Heng Shun Works in 1926, is operated on a small scale. Although formerly there was a large power house attached to the steel works generating power for its own use, this has now ceased operation. At present, only the power house attached to the Hanyang Arsenal is still in operation.

Tientsin

Electric supply in Tientsin is furnished by a total of five power companies of which the Tientsin Tramway & Lighting Company, Ltd., is the largest, having 35,000 consumers in all. This company was founded by Belgian interests and has a generating capacity of 21,900 kilowatts. Its annual power production amounts to 34,000,000 units of which more than half is used for power purposes. Smaller in magnitude but far more prosperous in business is the Electricity Department of the British Municipal Council. Capable of turning out 7,500 kilowatts, this power plant supplies electricity mainly to the British Concession. Next in importance may be mentioned the *Energie Electrique de Tientsin* founded by the French Municipal Council. Having a power capacity of 6,000 kilowatts, this concern furnishes electricity chiefly to the French Concession. In addition, there is a Japanese-operated electric plant founded by the Japanese Municipal Council. The only power company under Chinese management is the Tien Yeh Sin Company organized by the Tientsin Municipal Council. Electricity in the First Special District is supplied by this concern which is in the habit of drawing its requirements from the Electricity Department of the British Municipal Council.

Peiping

Altogether there are three electric companies in operation in Peiping, viz., the Peiping Chinese Electric Light & Power Company, Ltd., the Peiping Electric Tramway Company, Ltd. and the Peking Electric Company.

The Peiping Chinese Electric Light & Power Company, Ltd., was established with a capital of \$4,500,000 over 30 years ago. Capable of producing 35,000 kilowatts of current of which 15,000 kilowatts have recently been added, this company has, in recent years, been bending considerable efforts on the improvement of its plant, but being encumbered with heavy debts, the expansion scheme has thus far met with little success. At present, a total of 34,000 consumers are supplied with lighting, the number of power consumers being comparatively small.

Founded by British interests and incorporated in Hongkong, the Peking Electric Company, Ltd., is operated on a small scale, its business field being confined to the Legation Quarter in Peiping.

The Peiping Electric Tramway Company was organized with a capital of \$4,000,000 of which sum half was subscribed to by the Government and half by private interests. The business field of this company had overlapped with that of the Peiping Chinese Electric Light & Power Company for many a year and it was only through the intervention of the National Reconstruction Commission that the long-standing controversy was satisfactorily settled in 1933. According to the arrangements worked out by the Commission, a demarcation of business fields between these two companies was made. The exclusive privilege for the supply of electricity to the Peiping Municipality was accorded the Peiping Chinese Electric Light & Power Company with the reservation that the aforementioned company should purchase a part of its requirements from the power station of the Peiping Electric Tramway Company at Lunghsien.

Tsingtao

In common with many other industries in Tsingtao, Japanese influence has played an important part in the development of the electric enterprises in this city where electricity is supplied by the Chiao Oa Electric Company. Founded by Sino-Japanese interests in 1923, this concern is capitalized at \$2,000,000 of which sum Japanese shares account for 46 per cent and Chinese the remainder. It has two power plants with a combined capacity of 43,000 kilowatts. The bulk of its output is mainly supplied to industrial enterprises for power purposes, consumers under this category including a number of cotton mills. Current for lighting is charged at a fairly high cost, and in this connection, the company has been repeatedly ordered by the National Reconstruction Commission for a reduction in the selling prices of current, but so far as could be learned no changes in this respect have been brought about.

Because of the high cost of current, bulk consumers occupy the majority of its clients the number of this type of consumers being 24,800 as against 8,000 meter renters. During the past few years, a steady operation has been observed in the business of this company which is reported to be making a handsome profit annually. The total assets of the company are estimated at about \$5,000,000.

Tsinan

Electricity supply in Tsinan is taken care of by the Tsinan Electricity Works. As this company was placed under inefficient management in the past years, the service was very unsatisfactory resulting in a sharp decrease of consumers. With a view to rectifying this unsatisfactory state of affairs, the Shantung Provincial Government formally took over the company in 1933. Since then, many improvements have been made. Apart from placing a strict inhibition on the secret tapping of current, a 5,000-kilowatt generator was later installed, thereby increasing the total capacity to 8,000 kilowatts. Besides, a reduction in the selling cost of current was also made, much to the satisfaction of its consumers.

Kwangtung

Canton Municipal Electric Power Administration.—The Canton Municipal Electric Power Administration was formed in 1930 by the Canton Municipal Government by taking over the former Canton Electric Power Company. Following the change of management, steps were taken to enhance the electricity production of the plant as well as to reduce the prices of current. With regard to the former, since the new management assumed office, the power capacity has been increased from 16,000 kilowatts to 24,000 kilowatts. In addition to this, a project calling for the erection of a new 30,000-kilowatt power station at Saichuen was mapped out in 1932. Preparations for the project were taking shape rapidly. In 1934, machinery was purchased from a German firm and in the ensuing year the new plant was completed. As regards the reduction in the cost of electricity, while the rates had been slashed from 25 cents to 20 cents per unit after the new management assumed office, they were reverted to the old level shortly afterwards.

During recent years, a prosperous business has been evident in the operation of this company. For the year 1935, it was reported to have realized a profit amounting to \$1,170,000 out of its gross receipts of \$6,860,000. As far as business revenue goes, the amount received by this concern is considered the largest among the Chinese-operated electric companies in the country.

Considering the fact that Kwangtung is the chief industrial and trade center in South China, the prospects for the development of electric enterprises in this province are exceedingly encouraging. According to a survey made by experts, a total of 50,000 horsepower sufficient to feed a large power plant can be produced by making use of the water power of the Weng River, about 150 kilometers away from Canton. However, in view of the huge amount of money involved in this project which is estimated to require a sum of \$20,000,000, this scheme probably will not materialize for some time to come.

Kwangsi

Electric enterprises in Kwangsi are lagging far behind those of Kwangtung. Because of the poor means of transportation which renders the conveyance of fuel difficult, a great number of power plants in this province are equipped with Deisel-engines or charcoal-burning engines having a power capacity of about 1,000 kilowatts. As an illustration, the Wuchow Power Plant, the largest Government-owned electric works in Kiangsi, is equipped with Diesel-engines. The same condition is true with many other plants including the Nanning Electric Plant, the largest private-owned electricity works in the province. Nevertheless, the Kwangsi Provincial Government has in recent years spared no efforts and expenses in the promotion of the electric enterprises. Among the electricity works recently completed by the provincial government may be mentioned the 3,200-kilowatt power plant in Hohsien supplying to the requirements of the tin mines and collieries in that locality as well as the nearby districts such as Chungshan and Fuchuen.

Rehabilitation of the Canton-Hankow Railway

By F. K. SAH, in "The Quarterly Review of Chinese Railways"

NEVER before in the history of railways in China was a project so beset with difficulties and so delayed in consummation as the recently completed Canton-Hankow Railway. The building of the line was advocated as early as 1895 by the late Manchu Government and construction actually began in 1900, but it was left to the good fortune of the year 1936, after a lapse of fully thirty-six years, to see the scheme come to final fruition.

The story of the construction of the Canton-Hankow Railway may be divided into three periods; the period of divided construction, the period of inactivity and the period of concentrated exertion. The first period ended in 1918 with the completion by the then Peking Government of the section from Wuchang to Chuchow, a distance of 417 km., the southern section of 224 km. from Canton to Shaochow having been completed by the Yueh Han Railway Company in 1916. The years between 1918 and 1929 were marked by unsettled conditions abroad as a result of the World War and civil strife within the country, consequently nothing was done towards continuing the construction of the line, except that in 1923 the section from Canton to Shaochow was taken over by the National Government and incorporated into the National Railways of China. The period of concentrated exertion began in 1929. No sooner had the Ministry of Railways been created in Nanking in the winter of 1928 than the completion of the Canton-Hankow Railway was at once singled out as the work to which all possible efforts were to be directed. Bolstered by the hope that a portion of the returned British Indemnity would be available for the building of railways, the Ministry ordered, in the spring of 1929, the establishment of the Chuchow-Shaochow Construction Office in Canton with the expressed object of carrying out at first the construction of only the short section from Shaochow to Lochang, a distance of 50 km. But the negotiations to secure the Indemnity funds were not only protracted but met with scanty success, so, as time went on, it was found that money available for the work of this section was getting insufficient. The pace of the construction work had to be slackened accordingly. The Ministry mustered all available resources and appropriated \$2,400,000 for continuing the construction, while a grant was obtained from the Belgian Boxer Indemnity fund for the use of \$2,600,000 for purchasing abroad some track materials and rolling stock. In spite of these heroic efforts, work had to come to a standstill in 1932, and it was not until late that year when an advance of \$700,000 was secured from the British Indemnity Fund that resumption of construction was made possible. The section was completed in September of the following year and turned over to the Canton-Shaochow Railway Administration for operation.

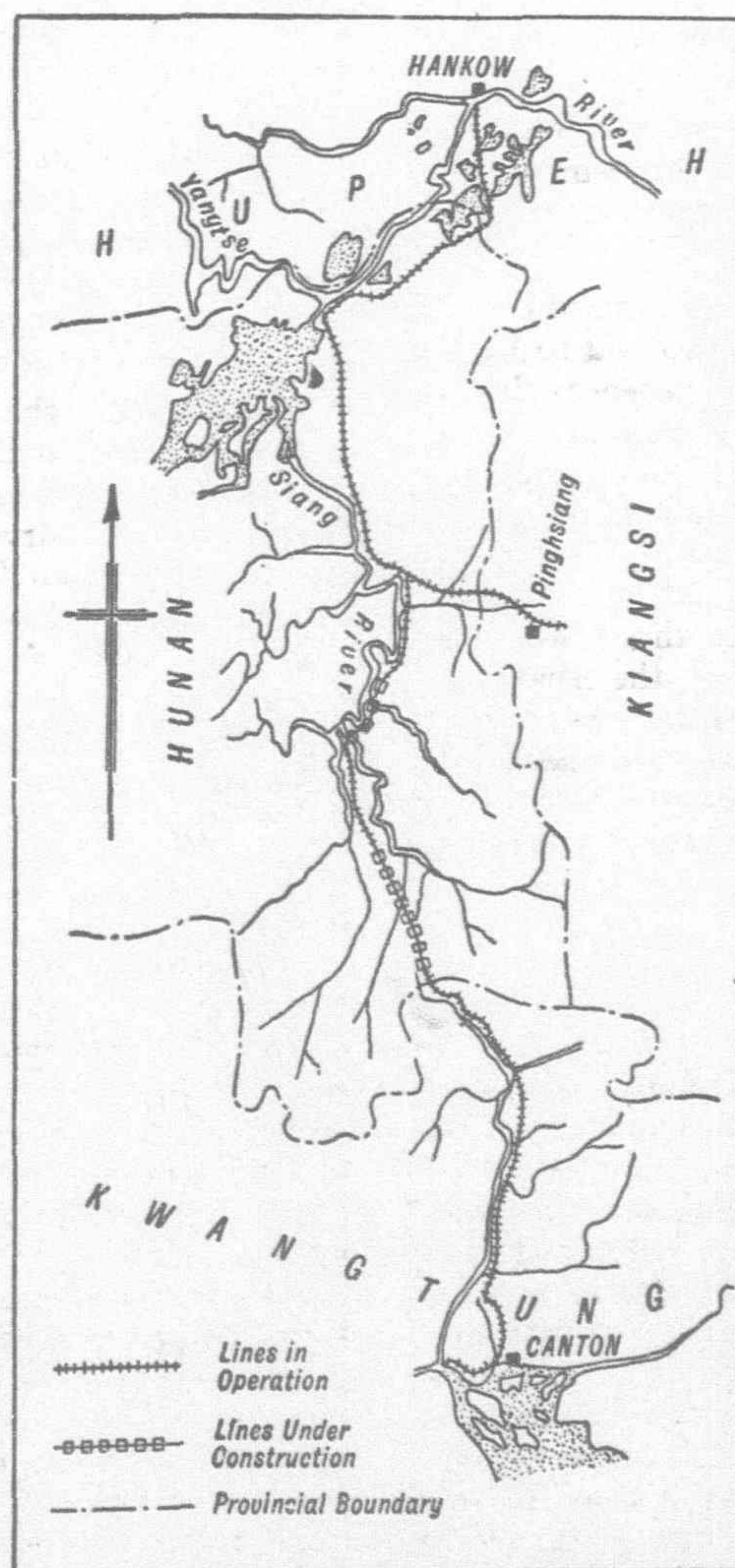
That the construction of this short section from Shaochow to Lochang involved an expenditure of \$5,700,000 and a duration of 4½ years was due to reasons strictly financial, although from the engineering point of view only slight difficulties were encountered. One annoying feature of this section is that a considerable number of cuttings along the line are very tricky, the side-hills being composed mainly of loose earth, rock, and sometimes coal, so that in case of heavy rain large chunks are liable to slide on to the track. This is not only a source of danger to traffic, but presents quite a problem for track maintenance. As the complete elimination of this troublesome feature will mean a very large outlay, a plan

has been evolved by the railway administration whereby the slippery cuttings will be improved in stages, starting with the most dangerous places. It is expected that in course of time by the use of catch basins and retaining walls the sliding of the side-hills in this section will be arrested.

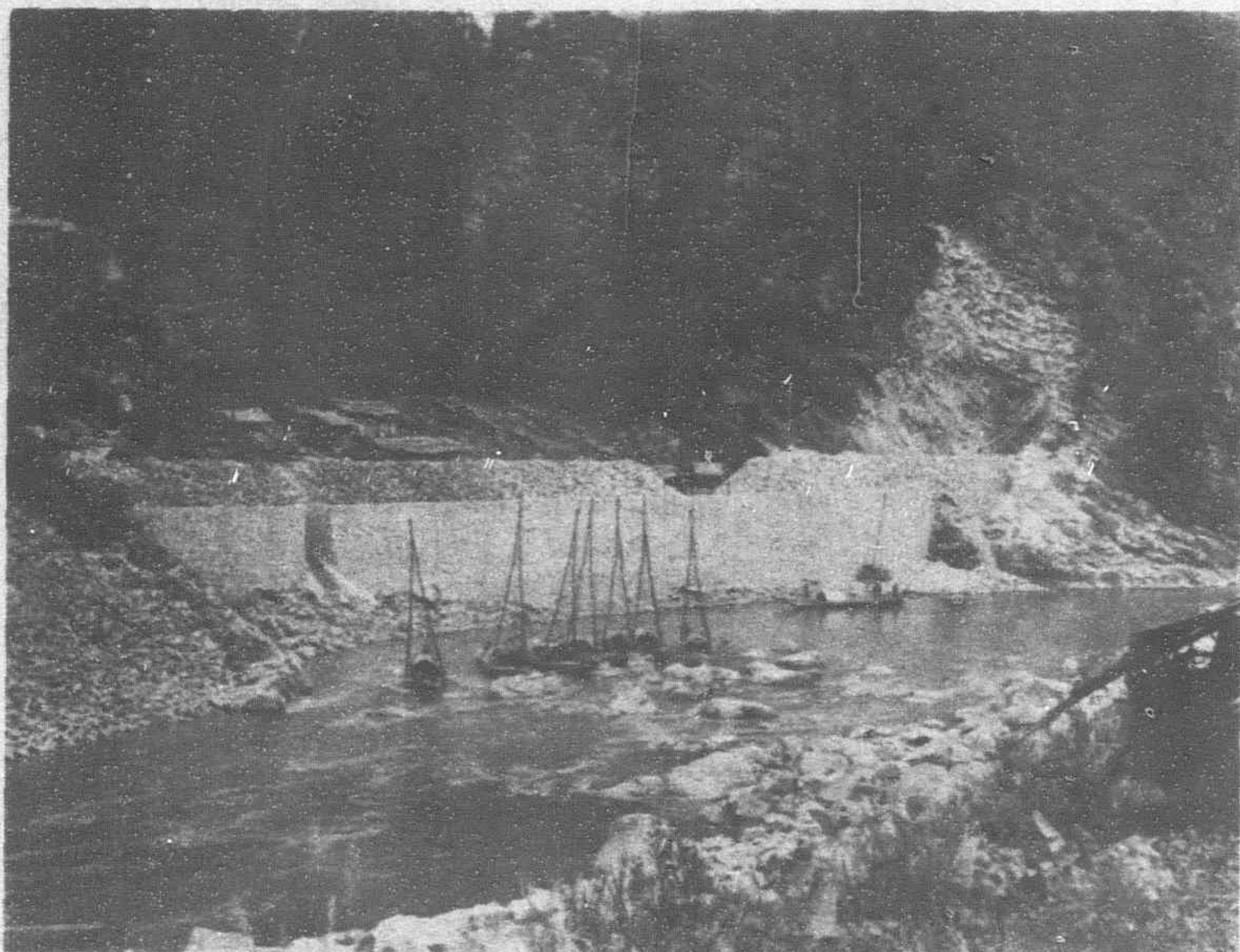
The signing of the agreement in July 1933 between the Ministry of Railways and the Board of Trustees of the British Indemnity Funds was a memorable event for the Canton-Hankow Railway, for by that agreement the Ministry secured £1,660,000 for the purchase of materials abroad and some \$30,000,000 for the cost of labor and local materials in China. The necessary funds having been assured, the construction work of the remaining gap between Lochang and Chuchow, 406 km., was ordered to be pushed ahead with intensified efforts. The Chuchow Shaochow Construction Office was removed from Canton to Hengchow in order better to direct the work then in rapid progress. Construction was started and carried on simultaneously in the six districts into which the whole section was divided. The goal was set to finish the line by the summer of 1937, which shortly afterwards was advanced to the end of 1936. With the coming into office of the New Administration in the Ministry of Railways in December, 1935, new orders were issued to the Construction Office to have the line linked up by all means not later than April, 1936, and officials were sent to the spot to see that the orders were obeyed. After feverish efforts which included the introduction of night work and the resort to temporary structures where the permanent ones would entail greater length of time, the last rail was laid on the 28th of April, 1936, and the line was through from Wuchang to Canton.

This closing up of the gap, however, did not mean that the line as a whole was ready and fit for normal traffic. In the haste to have the track linked up, thoroughness had to be sacrificed for speed, and many important works which were not a part of the track itself but nevertheless had appreciable bearing on the volume and safety of the traffic had to be deferred until the line was put through. Thus the road-bed was not yet properly ballasted and the earthwork being new was in danger of shrinkage and sliding after rain. Station buildings and appurtenances were lacking while loops and sidings were sadly insufficient. Traffic signals had not yet been installed and the temporary structures put up in a hurry were not able to bear the load of the heavy locomotives which had been specially ordered for the line.

As to conditions on the old sections, they were much worse. The section from Canton to Shaochow was too short to be profitable and money had not always been available for the proper upkeep and maintenance of the line. Many structures and appurtenances, while adequate for the local traffic they had been used to carry, were now either too weak or too dilapidated for the duties of the through traffic which they would be called upon to shoulder. Among the principal defects which urgently needed to be remedied may be mentioned: (1) Insufficient Length of Station Loops and Sidings—they were too short for the long trains which could be hauled by the powerful locomotives specially ordered for the Railway. (2) Excessively Sharp Curves—they were uneconomical and a source of danger. (3) Weak Bridges—some bridges were not up to even Cooper's E-25 loading and not fit for heavy locomotive transit. (4) Inadequate Water Supply—too much time was



Location of the Canton-Hankow Railway



Typical long retaining wall along the Canton-Hankow Railway



One of the tunnel portals on the Canton-Hankow Railway

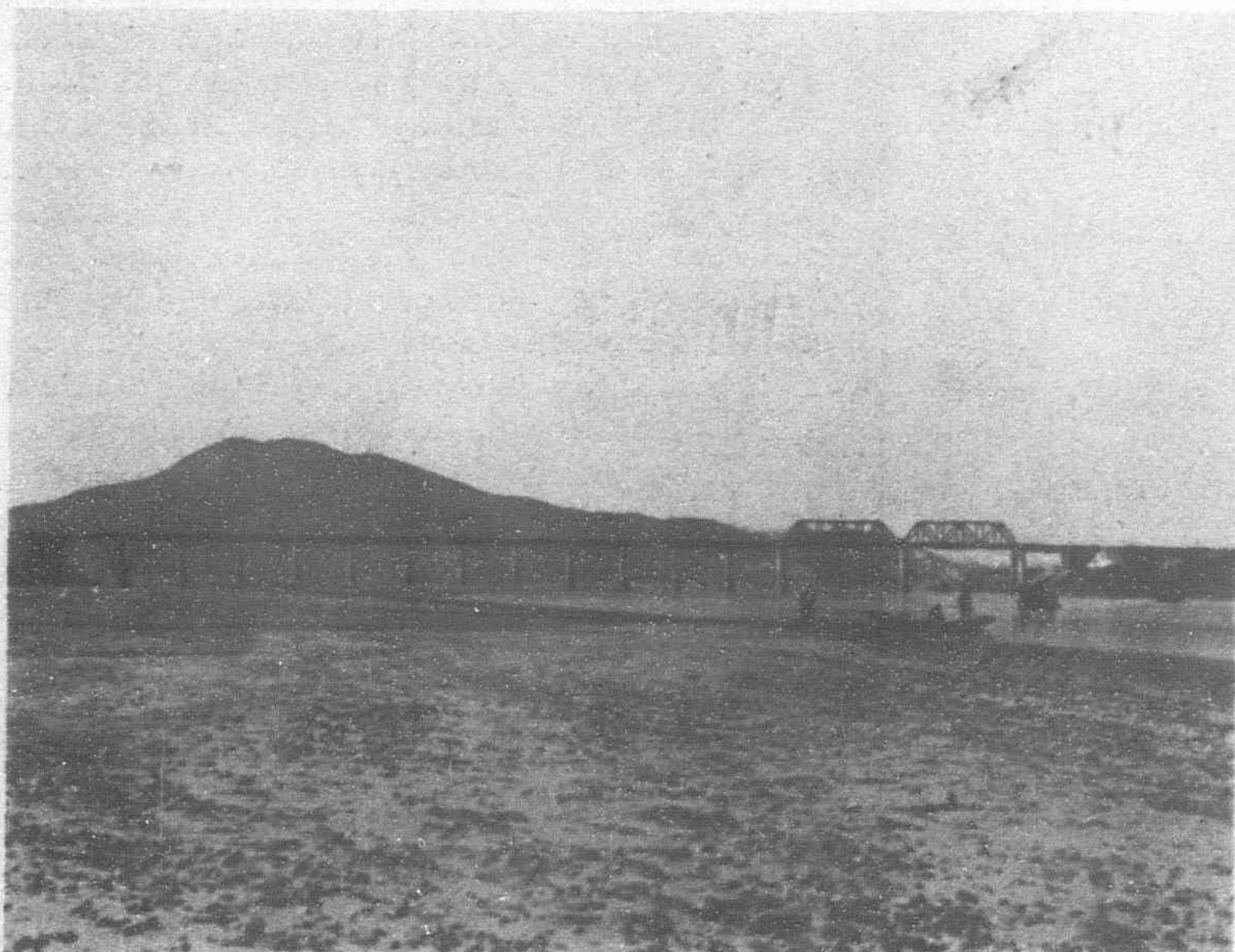
required for the system to feed the new locomotives. (5) Lack of Station Appliances like turn-tables, etc., without which locomotive and car movements were executed only with extreme difficulty.

The Wuchang-Chuchow Section, faced with fierce water competition, had lived in exigency from the very beginning. Furthermore, it had been the seat of more than one bloody civil war which had played havoc with everything on the line. Consequently, this section was in a deplorable condition. More than three quarters of the sleepers were decayed with the dog-spikes so loose as could easily be plucked by human fingers. No ballast had been replenished since the rails were laid and the road-bed, not having been repaired and properly maintained, had been allowed to get out of grade especially at the bridge approaches. The longest bridge in this section which had been damaged by explosion years ago was, with the help of a few make-shift props, still left to function. On the top of these, there were not sufficient or adequate loops, appliances, water supply and signals to take care of the through and increased traffic which the section was soon to be called upon to run.

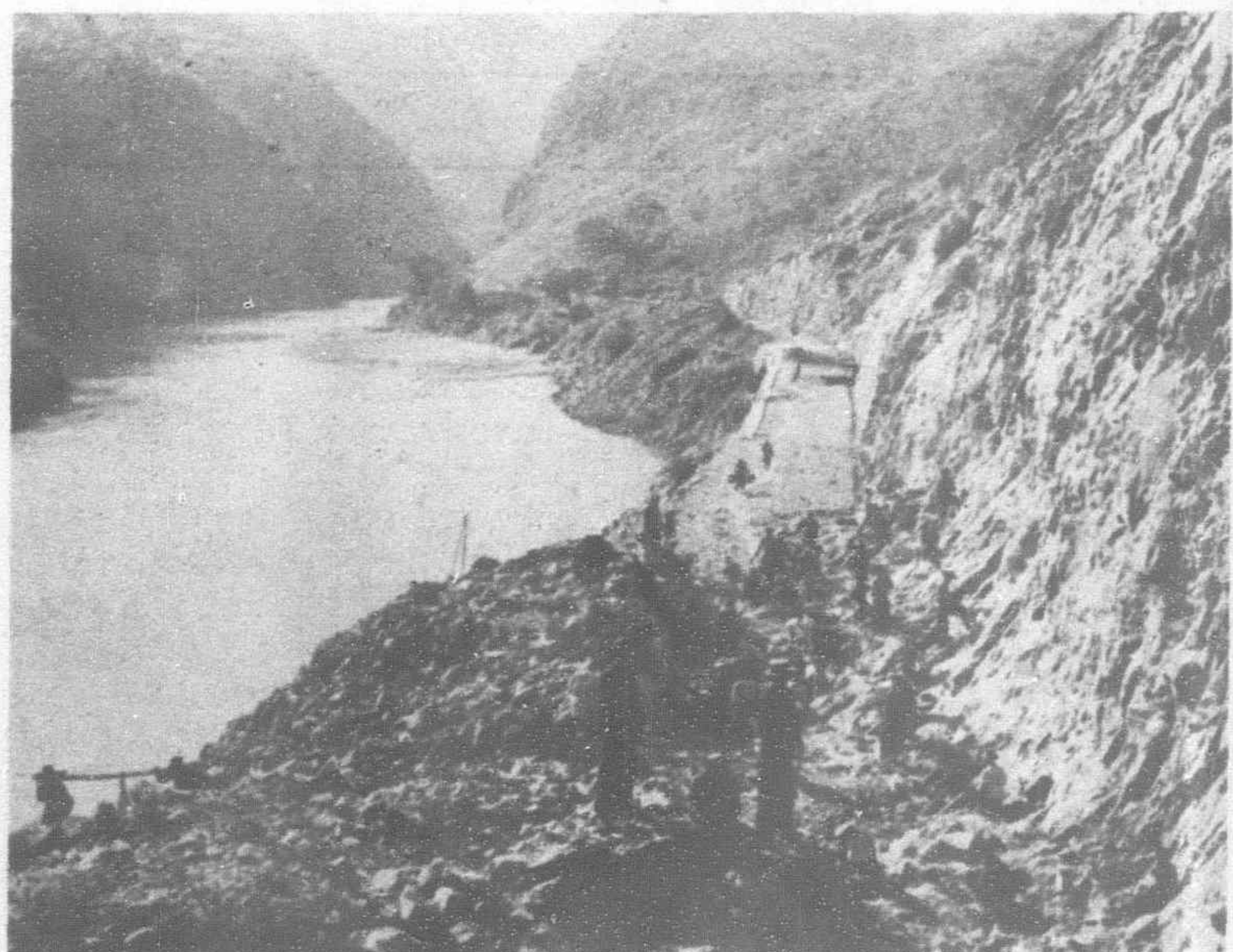
Such were the conditions of the three sections when they were to be merged into one line as the Canton-Hankow Railway, which was effected in July, 1936. Unfortunately for the railway the time for this unification was most inauspicious. Hardly had the line been completed than the Kwangtung and Kwangsi Provinces declared to take independent action, and large bodies of government troops were dispatched from central China to the Kwangtung provincial border. As the Canton-Hankow Railway was the quickest and most direct route to take, the newly unified line had to be pressed into service. The difficulties were almost insurmountable. In

addition to the defects and inadequacies already described, the rolling stock was scarce and unconditioned, as the new rolling stock ordered from abroad had not yet arrived. Light locomotives had to be used in sections where the structures were too weak for heavier engines and such sections were many. The use of light locomotives, of course, curtailed a greater part of the available hauling power. The staff, especially in the newly completed section, was new and not yet familiar with the peculiarities of the line. And lastly, three steel bridges, one 45 meter truss at Tien Tou Shui, one 30 meter truss at Chiu Feng Shui and one small girder at Niu Kang, had been blown up by the retreating Kwangtung army. It must be said to the credit of those concerned that notwithstanding these difficulties, at least three hundred thousand soldiers and their equipments were successfully moved to and from the southern province. The transportation was, however, unfortunately marred by a few accidents. But it is well to remember that the facilities of the railway had been stretched to almost breaking point and the causes contributing to the accidents were not difficult to seek. Even so, some of the accidents might have been avoided had there not been unwarranted interference from irresponsible parties.

As early as the summer of 1935 the Canton-Hankow Railway Rehabilitation Planning Commission was formed in the Ministry of Railways which, as the name implies, was charged with the duty of devising ways and means for the betterment of the conditions on the three sections of the line. This commission was in May 1936 reorganized to be the Canton-Hankow Railway Rehabilitation Commission with some of the most important persons in the Ministry and the railways as its members. After repeated meetings and



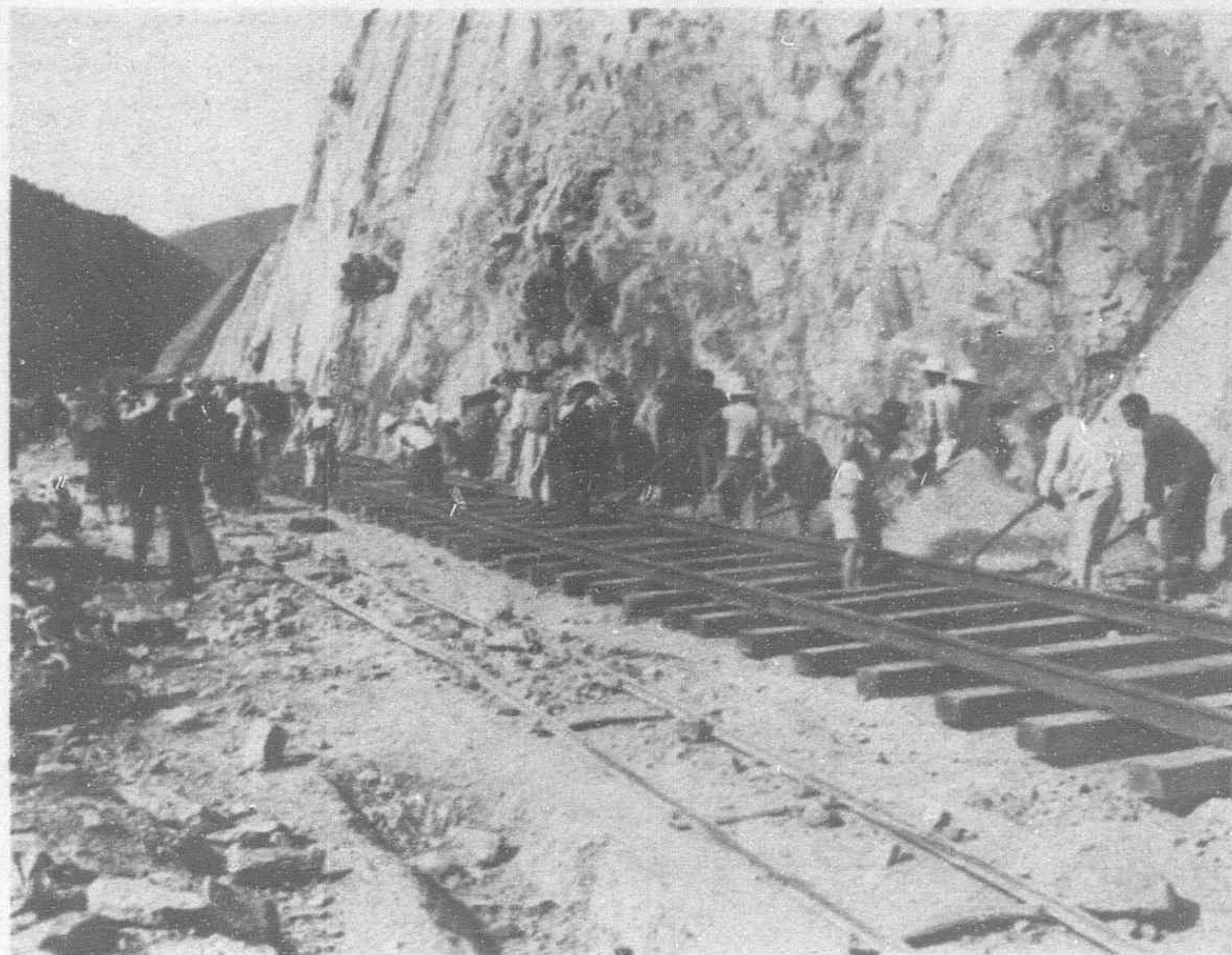
Mi-Ho bridge on the Canton-Hankow Railway



Roadbed on a side cut showing topography of region



Section of the Canton-Hankow Railway showing approach to tunnel portal



Scene showing track laying of the last section built on the Canton-Hankow Railway

having taken into account the financial resources at command, a comprehensive program, based upon the plan previously mapped out by the Engineering Department of the Ministry, was drawn up for the gradual eradication of the defects, a few important items of which are outlined as follows:—

Track.—The track of the Hunan-Hupeh section was in the worst condition possible, as about 70 per cent of the sleepers on the entire section had to be renewed, which amounted to about 480,000 pieces. The order for 100,000 steel sleepers from England, 260,000 jarrah sleepers from Australia and 120,000 native fir sleepers from Hunan were placed early in the year. These sleepers have all arrived, and the work of replacing them is being carried out with feverish speed. The track condition on the Southern section is considerably better, so a replacement of 80,000 sleepers will answer its present requirement. The order for the purchase of these 80,000 sleepers is now in course of execution. Ballasting in most of the three sections was insufficient, and now as the line is less occupied with military transportation, addition of new ballast is being carried out simultaneously in all three sections. Sixty thousand pairs of special fish-plates have been ordered from England to be used on the stretches of track where steel sleepers are laid, in order that steel sleepers can also be used at the rail joints to give the track a homogeneous spring action which will ensure smoother running.

Bridges.—After a thorough inspection of all the bridges by the bridge engineers sent out by the Ministry in 1933 and 1934, it was found that with a few exceptions all the steel superstructures on the Hunan-Hupeh Section were in condition to carry the present loading of E-35. There were, however, eight bridges which required either replacement, strengthening or repairing due to faulty designs or damage sustained during civil wars. The work of improving these eight bridges was completed last summer with the exception of bridge No. 7, which work has been considerably delayed on account of military transportation. The result of the inspection on the Canton-Shaochow section showed that most of the bridges on this section were much too weak to carry the new 4-8-4 locomotives. After much study, it was finally decided to strengthen

them by electric welding, with the exception of the Pu Tang Kow bridge which has to be replaced by entirely new spans. The work was contracted in May 1936 for the strengthening of 160 spans with a total length of approximately 18,570 linear feet of electric welding. At the end of October, about 80 per cent of the work was done, and it was expected that the completion of the work would be realized before the end of the year. After the completion of this piece of work and the replacement of the Chiu Feng Shui bridge and the Pu Tang Kow bridge, all bridges of the entire line will, aside from ordinary maintenance work, require no further strengthening as long as the present loading is not exceeded. At the same time about 10,000 bridge sleepers are being renewed in both the northern and southern sections.

Road-bed.—At the junction of embankments and bridges in many places were found sags which caused unsmooth running as the trains were getting on or off a bridge. These sags have been eliminated by additional filling and tamping.

The stretch of road-bed between Changsha and Chuchow is often submerged during the time of extraordinary high flood. It is planned to have the embankment of this stretch raised to a couple of feet above the highest flood level. This work has not yet commenced but will be carried out as soon as works of a more important nature are completed.

Loop lines.—On the Hunan-Hupeh Section there were many stations having only one loop line, which was considered insufficient for the increasing number of trains, so it was decided to add a second loop line in nine of such stations. This work has been completed. On the Canton-Shaochow section most of the loop lines are not quite up to the minimum length as required by the Ministry's standard. It was decided as the first step to lengthen the loop lines in seven of the more important stations to a minimum effective length of 530 meters. This work is being carried out at this time.

Crossing stations.—In order to allow more frequency of trains, two crossing stations have been added between Pai Sui and Kao Chia Fang stations and between Yi Chia Wan and Chuchow stations.

Water cranes.—To reduce the time required for



Showing a bridge on the Canton-Hankow Railway at approach to tunnel portal

watering at stations, it was decided to replace all the water cranes and pipes in the Hunan-Hupeh and Canton-Shaochow sections with new cranes and pipes of ten inch diameter. The materials are being ordered from England.

Turntables.—Due to the increased length of the new 4-8-6 locomotives, it was found necessary to increase the length of the turntables to 30 meters. Four new turntables were ordered from England, and two of them are now being installed in the Hunan-Hupeh section, while the remaining two will be installed in the Canton-Shaochow section as soon as they are delivered. Efforts are also being made to lengthen the existing turntables to the required length.

Ash pits.—Five additional ash pits are being constructed in some of the more important stations in the Canton-Shaochow Section.

Station buildings and platforms.—In anticipation of handling more passenger and freight traffic, additional platforms have been completed in Changtung and Yichia Wan stations, while a new station building is being constructed at Ping Yang Men near Wuchang city for the convenience of passengers from or to Wuchang city.

Rolling stock.—The following table gives the number of locomotives, carriages and wagons now in the possession of the entire line. It includes the 30 new carriages not yet delivered but are now on their way from England:—

		Locomotives	Carriages	Wagons
Hunan-Hupeh Section . . .	..	41	102	610
Chushao Section . . .	..	28	50	475
Canton-Shaochow Section . .	..	36	109	431
Total . . . . .	..	105	261	1,516

While the rolling stock of the Chuchow-Shaochow Section is all new, those of the other two sections require early overhauling, especially after the recent continuous service on account of military movements which overworked a great number of them to such a degree as to make immediate overhauling necessary. Spare parts, machinery and tools valued at approximately £70,000 have been ordered from England for their repair. As the workshop capacity at present is rather limited, it has been decided to send 24 of their locomotives to be repaired in the shops of other lines.

It may be mentioned that the new type 4-8-4 locomotives were selected to meet the physical condition of the line, especially the Chushao section where there are long steep grades requiring locomotives with ample boiler capacity, grate area and firebox volume. They are specially suited to burn soft coal of low calorific value as obtained from Ping-Hsiang Colliery.

Carriages sufficient for five trains have been ordered for the through service between Canton and Wuchang. Each train will be composed of one first class sleeper, one second class sleeper, one second class day coach, one diner, four third class coaches which are convertible into sleepers, one baggage and mail van, and one baggage and guard van. All the first, second, and third class coaches are of steel construction, and are equipped with ample electric fans and ventilators to suit the southern climate. According to contracts the last shipment of these carriages should have been effected at the end of June, 1936, but their delivery has been considerably delayed on account of increased demand for steel and armament in England, causing great difficulty in obtaining essential supplies, and also on account of shortage of skilled workmen and draftsmen.

Signalling.—The signal system for the entire line has been carefully prepared by the Chief Technical Expert's Office of the Ministry of Railways to meet the present requirements, and with a view to allowing such additions and improvements as may be required in the near future. The major parts of the signalling prescribed for the Railway are outlined below:—

(a) *Block Working.*—For the first few years, it is predicted by traffic experts that the traffic of the Railway would not be heavy enough to warrant the installation of an electric train token system. On the other hand, as the limitations of the electric token systems have been evidenced on some of our busier lines, a rapid growth of traffic (which is by no means improbable) might soon demand some newer system for block working. Consequently, it was resolved that the "Staff and link" system be for the time being employed for the block working of trains.

(b) *System for the Smaller Stations.*—With the exception of a few larger stations, the lever frame centrally located at each

station operates signals only. One home signal is provided for each platform or loop line where an incoming train is to be admitted. At each end of a station there is a distant signal fixed at caution to warn the driver before he approaches the home signal. The points are hand-worked by pointsmen at the site. To check against the clearing of signals without first having the points properly set, all the principal points are equipped with mechanical detectors to effect the necessary correlation between points and signals. To prevent the points from being moved while a train is passing over it, all principal points are equipped with economical facing point locks and 50 foot lock bars. As no starting signals are provided, the indication of points to the leaving trains is effected by means of point indicators. At stations where there is one or more sidings, the main roads are protected by means of Annett locks as these sidings are rarely used. The more frequently occupied sidings are equipped with derails and discs in addition to the Annett locks. The few sidings which are in everyday use are equipped with signals like a platform or loop line.

(c) *System for the Larger Stations.*—From Canton up, the larger stations are Ying-Tak, Lochang, Shaochow, Chenchow, Hengchow, Changsha North, and Hsu-Chia-Peng.

These stations are signalled in various degrees of completeness according to their size and importance. In each instance, the principal points as well as signals are all worked from the central lever frame and interlocks therein, the points for the frequently used sidings being included. Shunting signals are provided wherever it seems helpful and in a number of cases starting signals are also provided. At Ying-Tak, Lochang, Shaochow, Chenchow, Hengchow and Changsha North, where two cabins are necessary with mechanical interlocking, the home signals at the two ends of the station are electrically interlocked.

(d) *System for Hengchow.*—Being the largest station of the lot, also the most important at the time when the design was made, Hengchow is provided with an electro-mechanical system. All the running signals are of the multi-unit color light type. Full approach and back locking with time releases are provided. These signals are to be operated by miniature levers or key switches. The shunting signals are of the small banner type operated from the mechanical lever frames. As all the interlocked points and crossovers are mechanically operated, the levers are concentrated in two lever frames housed in two separate cabins, one at each end of the station. These points are plunger-locked, locked by track circuits, mechanically locked with each other and electrically interlocked with the running signals. The interlocking between the points and the shunting signals are done mechanically or electrically or both as the case may require. Besides the mechanical lever frame, each cabin is equipped with an illuminated track diagram where indications are given electrically of the signals (on or off), of the points (normal or reverse), and of the tracks (clear or occupied).

(e) *Wang-Sha and Chuchow.*—Wang-Sha station, as it is, requires complete alterations in the layout. As many factors affecting these alterations are still unsettled, no signal system can yet be devised.

As to Chuchow, it is yet a small station and was treated as such in the present project. After its being extended into a railway and manufacturing centre of first importance, a completely new system of interlocking will have to be introduced.

The material for the signal systems is now being ordered from England.

Workshops.—It is now planned to build a Central Workshop at Chuchow which will be under the control and management of the Ministry of Railways, and which will not only repair the rolling stock of the Canton-Hankow Railway but will also undertake the repair work and manufacture of spare parts for other lines having connections at Chuchow. At the same time the present shop at Hsu Chia Peng will be slightly enlarged and a new up-to-date locomotive shed put up at Sai Chuen, next station to Canton, to look after the repair work of the existing rolling stock before the completion of the Central Shop.

Chushao Section.—As already mentioned, the work in this section was hurried through last April to meet military requirements by resorting to temporary measures. A special Engineering Office is still being maintained under the capable direction of Mr. H. H. Ling, now concurrently Managing Director of the entire line and Chief Engineer of this Engineering Office, to complete the

(Continued on page 319)

Civil Aviation in Japan*

IN any general survey of the present condition and future possibilities of civil aviation in Japan, certain important adverse factors must be taken into consideration. Owing to the mountainous configuration of the country the danger naturally attending a forced landing is considerably aggravated; the scarcity of potential passengers requiring rapid transport between the various internal cities and centers of population affects unfavorably the extension of existing services; the extremely limited number of persons of alien nationality from the continent of Asia likely to avail themselves of this means of transport must necessarily restrict the number of air routes to be brought into operation.

The presence of such factors as these, which may be said hardly to obtain in the West, prohibit any comparison between civilian aviation in Japan and that in Europe and America. It will be necessary, also, for the purposes of this article, to regard the condition and possibilities of civilian flying as a separate entity, entirely detached from the services maintained by the Army and Navy, information and figures concerning which are not available.

Government Control

As so important a national utility as aviation could not safely be left to the mercy of private enterprise, governmental control was secured by the establishment of the Aviation Council. The members of this Council consist of the Vice-Ministers of the Departments of War, Marine, Education, and Communications; and such other persons as may from time to time be co-opted. All questions referring to the basic theory of flying machines comes within the purview of the Council, which is empowered to make recommendations to the different ministries concerned.

In order to popularize aviation and to extend a better knowledge and understanding of flying, a number of leading enthusiasts founded the Imperial Aeronautical Association. With the interest on the half million yen granted from the Privy Purse and the subscription of two yen contributed monthly by the individual members, the Association not only carries on a very active propaganda by means of lectures, cinemas, exhibitions, etc., but also makes donations in the shape of bonuses on excellence or of condolence money in the case of accidents directly due to aviation.

The International Aviation Commission is a permanent body, created in accordance with the terms of the Treaty relative to Aviation, and makes or receives proposals to and from the signatory Powers, and deals with all questions envisaged by the Treaty.

Close connection is maintained between civil aviation in this country and that in other countries by the International Federation, which exchanges with similar federations elsewhere such information as may be of value in the conduct or development of their special department.

All questions relating to the construction of flying machines, metallurgy, chemistry, physics, atmospheric conditions, etc., are assigned to the different individual clinics in the Aeronautical

Institute, located in the grounds of the Department of Agriculture of the Tokyo Imperial University.

Building and Equipment

Such, then, are the five authorities either exercising control over or supplying practical advice and assistance to the cause of civilian aviation. As regards the building and equipment of machines, the earliest established and the most important builders are:—

The Mitsubishi Heavy Industry Co., Ltd., in Nagoya.

The Kawasaki Shipyard, Ltd., in Kobe.

The Nakajima Airplane Works, in Gumma Prefecture.

The Ishikawajima Works Ltd., in Tokyo.

The Kawanishi Airplane Co., Ltd., in Hyogo Prefecture.

The suppliers of wireless and the general electrical equipment are the Aichi Time-Piece and Electric Apparatus Co., Ltd., of Nagoya, and the Tokyo Gas and Electric Industry Co., Ltd., in Tokyo.

A considerable number of private institutes and schools have been opened for the training of civilian pilots, by far the larger number of which being situated either in Tokyo or in the immediate vicinity, which fact seems to show that the capital leads the rest of Japan in air-mindedness.

The premier civilian aviation company of Japan is the Japan Air Transport Company, founded in 1929. In receipt of a Government subsidy capitalized at Y.19,970,000 at the date of its foundation, to be paid on an annually decreasing scale, the company has been able not merely to maintain an efficient service, as indicated in the accompanying chart, but also to be in a position to extend it as from June 1, of the present year, by the creation of an express route.

New Express Route

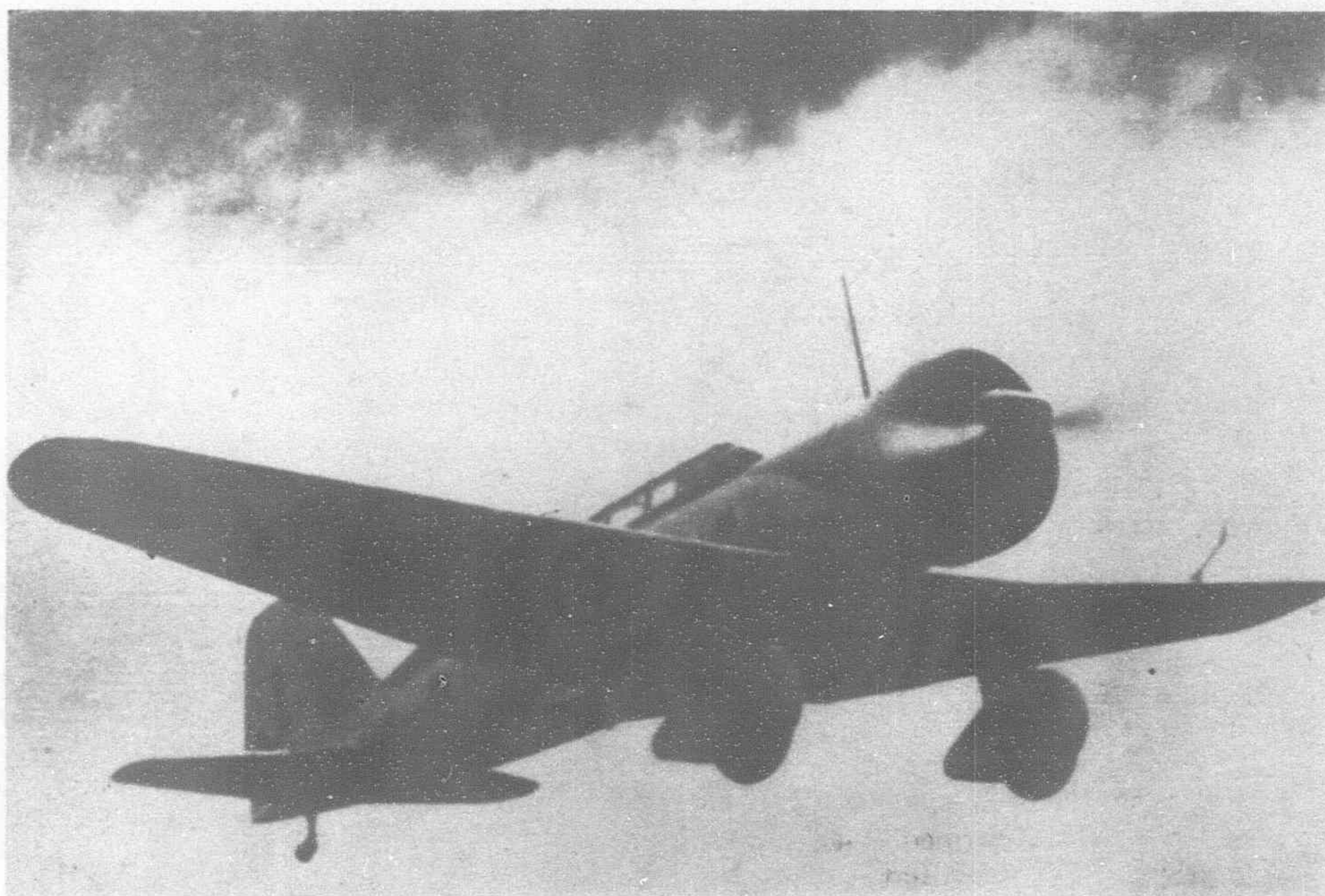
The express route will be from Tokyo to Fukuoka, at which point it will branch, one route going to Takao in Formosa, the other to Keijo in Korea

and thence to Hsinking via Mukden. From Keijo, also, a plane will take off for Dairen. The scheduled times are:—Tokyo-Hsinking nine hours; Tokyo-Dairen eight hours; Tokyo-Takao nine hours.

Although on occasions complete foreign-made planes are imported, it is usually the engines only that come from abroad. The majority, however, of the planes in present use were made and assembled in Japan, and it is a proof of the efficiency of the company's service when we learn that it has only had a single crash, and that this occurred several years ago. The company is now operating about 60 airplanes, of which the larger ones have accommodation for 14 passengers and the smaller for six.

World Record Flight

The *Kamikaze* airplane belonging to the *Tokyo Asahi* newspaper, that recently flew from Tokyo to London in record time without any mishap, was built by the Nagoya works of the Mitsu-



The famed Japanese-made monoplane "Kamikaze" which was sent by the Newspaper "Asahi" on a record breaking flight from Tokyo to London on the occasion of the coronation ceremonies at London

*Japan Advertiser Annual Review.

bishi Heavy Industry Ltd. The entire plane, with all accessories was made and assembled in Japan. It was built and tested, assembled and equipped solely under the supervision of Japanese engineers, mechanics and experts, no foreign aid whatever being given. The engine was built by the Nakajima Hikoki. The wireless was made by the Nihon Musen Denshin Denwa K.K.

This marvelous achievement of the *Kamikaze* will lead to greater development of civil aviation in Japan. Also, it has given confidence to the Japanese nation, in that up till now everyone thought that planes built in Japan were inferior to those made abroad. But now, greater confidence in Japanese aviation has been given to the public. If the Japanese people themselves thought that Japanese aviation was still in a very primitive stage, then one

can well imagine what the foreign people thought of Japanese aviation.

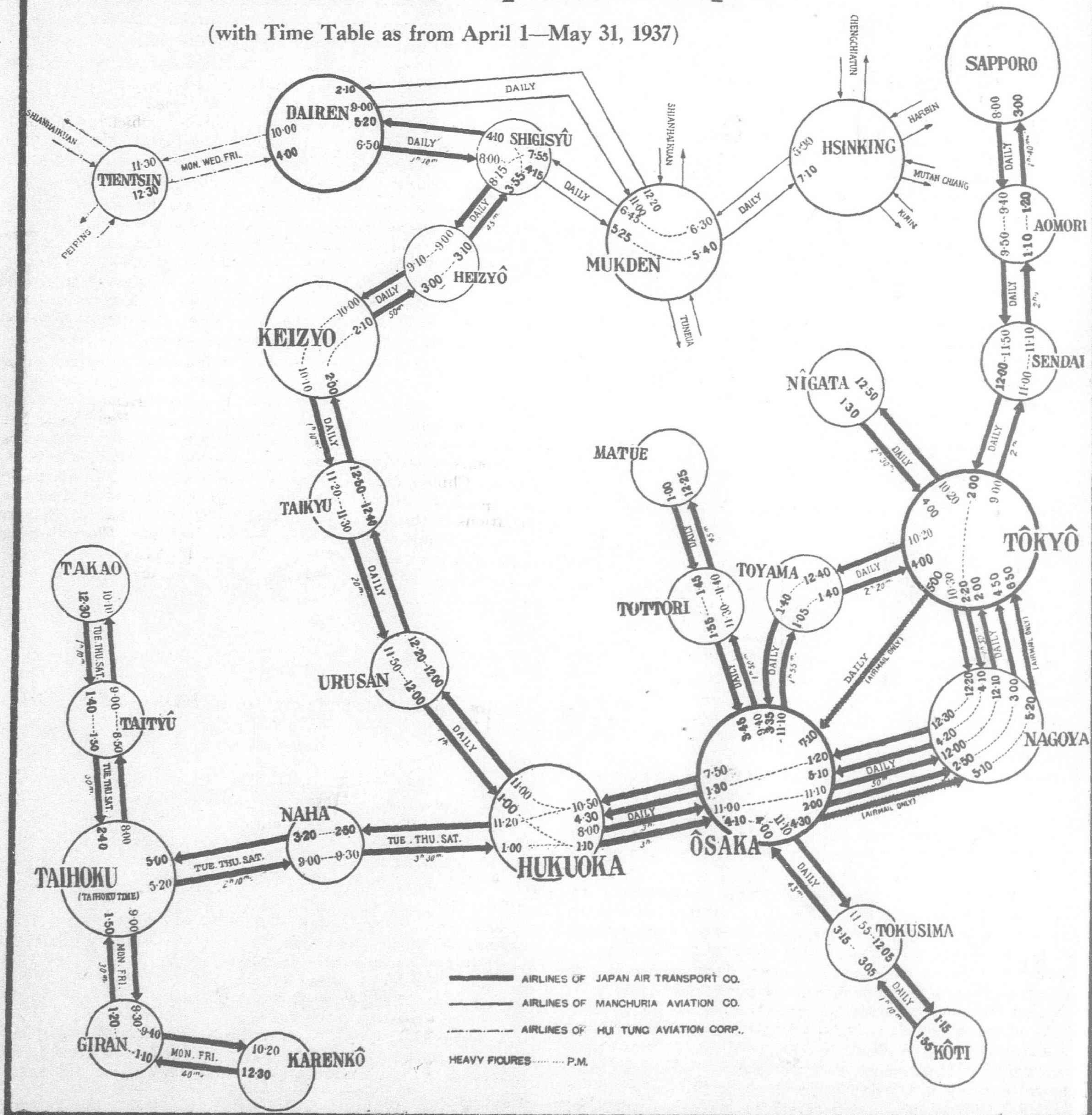
The pilot and mechanic of the *Kamikaze* are staff members of the *Asahi*. There are many other aviators on the *Asahi's* staff, and it is notable that from the beginning of aviation in this country the greatest stimulus has been given by newspaper enterprise.

Another Record Sought

Japan will shortly make a bid to outstrip the record for the longest non-stop flight held by Codos and Rossi of France, who flew from New York to Rayyak in Syria in August of 1933, covering a distance of 9,104.7 kilometers. The plane with which Japan

Air Routes in the Japanese Empire

(with Time Table as from April 1—May 31, 1937)



hopes to secure this record is the result of intensive research on the part of the Aeronautic Institute of the Tokyo Imperial University, and has been completed after four years' work.

Built by the Tokyo Gas and Electric Company, this giant monoplane has a total wing span of 28 meters, with a wing surface of 87 square meters, and measures 14.44 meters over all. The body is constructed of super-duralumim, and is streamlined with a retractable undercarriage. Within the wings are 14 gasoline tanks designed to contain 1,849.19 gallons, sufficient for a distance of 16,000 kilometers at an average speed of about 200 kilometers per hour, or approximately for 80 hours flying time. The motive power is supplied by a 600 h.p. improved type of the Kawasaki B.M.W. engine.

The plane will carry a crew of three, and when fully loaded will weigh 9½ tons and will require a runway for the take-off of 1,200 meters. Early in April last, ground tests were successfully conducted at Haneda Air-Port, and, as soon as feasible, a test flight will be carried out at Kagamigahara airfield by Captain Yuzo Fujita of the Army and Mr. Fukujiro Takahashi, who have been specially selected for the purpose.

Air Services for Holiday-makers

The Japan Aviation Company has recently announced the inauguration of a special summer service between Tokyo and Karuizawa, the most frequented mountain resort in Japan. A plane will be held available at any time on application from at least three passengers. The time scheduled for the single trip either way will be 50 minutes, and the fare per person Y.15.

The service has already been approved by the Ministry of Communications, and the take-off will be from the Haneda Airport. The position of the Karuizawa airdrome has not yet been indicated.

A rather attractive alteration in the previous route between Tokyo and Shimoda has also been announced. Instead of proceeding by way of Atami and Ito, the airplane will pass over Oshima island and flying above Miharayama will afford the passengers an opportunity of viewing the famous crater from the air.

Red Activities in China and Manchuria

(Continued from page 305)

Koron (Central Review), give a general situation of the Communist Party.

"As an organ for keeping in touch with the Communist Party in Manchuria, namely the Direction Department of the Chinese Communist Party's Committee of the Manchurian Provinces, there is the Manchurian Department in the Secretariat of Pacific Workers, an organ of the Comintern in Vladivostok. This department is under the supervision of the Comintern's Vladivostok representative. In view of the increasing importance of Manchuria as a field for Red activities and in order to maintain close connections with the Chinese Communist Party, a branch of the Communist Party was established in Vladivostok in March 1935. This organ keeps in touch with Communist organizations in various parts of China.

"With the above-mentioned directing organ in Vladivostok acting as the pivot, the Comintern keeps in touch with its communication offices in Grodekovo, Voroshilovsk, Poltavka and other places in the Soviet maritime provinces flanking the Manchoukuo-Soviet frontier. Reports state that the Comintern is planning the establishment of a secret Red front in the eastern Manchoukuo border districts, the branch communication offices projected at Suifenhö, Tungning, Hunchun and Tunghsingchen to be under the supervision of the Comintern's General Communications Bureau. The Comintern is apparently planning to establish another Red front in the Antung-Mukden railway area in co-operation with the Communist

bandits in Chientao Province. However, owing to the strict control exercised by the Japanese and Manchoukuo authorities it is reported that communication is maintained by the Comintern only with Tungning, Poltavka, Hunchun and Kievskoe on the border. Nevertheless, in order to oppose the continental policy of Japan and Manchoukuo, it must be borne in mind that the Comintern will continue to engage in secret activities for the Sovietization of Manchuria."

Parallel with the Red activities in the Manchoukuo-Soviet frontier area, the Comintern activities in North China which are closely connected with the Communist movement in Manchuria, have again become very noticeable, it being reported that various Communist organizations in that part of China, with the Political Bureau of the Tientsin Communist Party forming the nucleus, are working out various plans for the Sovietization of Manchuria.

The sudden coup d'état carried out by Chang Hsueh-liang's army in December 12, last year, involving the capture of Generalissimo Chiang Kai-shek and his detention at Sian, was an historic incident causing great confusion in the Chinese political situation. In concluding this article the writer considers it necessary to give an observation on the causes of the incident.

As the immediate cause of the Sian uprising is given the brooding resentment of the Young Marshal's subordinates against the attitude of the Central Government which tried to recognize and transfer elsewhere Chang Hsueh-liang's army, which had already been dissatisfied with the anti-bandit campaign in Shensi. It is also said that the former Mukden warlord executed the coup as the last resort to prevent the decline of his influence.

There have been frequent reports of the Sovietization of the former Northeastern army. At a time when the strength of the Communist forces in the northern frontiers of China has reached an unprecedentedly high peak, there is full justification in believing that the Young Marshal's 125,000 troops, having lost their fighting spirit and having accepted Communism, should have co-operated with the Red army and taken the drastic step to hinder the Nanking Government in the name of opposition to Japan.

The *Osaka Mainichi Shimbun*, on January 8, reported that on January 6, the Nanking Government had announced the abolition of the Northeastern Anti-Bandit Expeditionary Headquarters as a result of a compromise reached between Chang Hsueh-liang and Chiang Kai-shek. The paper reported that one of the terms in the compromise was that although no ostensible union would be made with the Chinese Communist Party, the Central Government agreed to suspend its anti-Communist campaign and hereafter direct the operations of the Central army towards North China and Suiyuan where the Communist bandits would also be sent. Close attention is required, for fears are entertained that the relation between the Sian incident and the Communist Army will develop into a grave situation.

Rehabilitation of the Canton-Hankow Railway

(Continued from page 316)

works still left undone in this section. The most important works are the improvement of the treacherous cuttings and embankments, the alteration of a short stretch of line of about 100 meters in length near km. 343, the ballasting and tamping of the track and the installation of necessary appliances. It is expected that most of these works will be completed before the next spring freshet.

The total cost of the above-mentioned works is estimated at over \$10,000,000 of which amount about half will be required for materials from abroad and the other half for materials and labor in China. The entire financial scheme has been worked out by the Ministry of Railways utilizing principally loans from the Remitted British Indemnity Fund. It is admitted that fulfilment of the entire program will be both slow and difficult, but given time and money there is no doubt that all the shortcomings will be successfully overcome and the whole line improved into really first class condition.

Petroleum and Its Products

By F. L. CHOW

The following is an address delivered before the Tsinan Rotary Club on January 14, 1937.

PETROLEUM and its products have come to be accepted by the civilized world to-day as a commonplace necessity of everyday life. Like coal, the liquid we know as petroleum was formed by some strange chemistry of nature ages and ages ago at many places in the earth's crust. It has been "under foot" as it were, through all the ages of man and yet has been made to serve mankind in a useful capacity only within the last eighty years or so.

History tells us that the people of ancient China and Japan, India and Persia used petroleum in a primitive way centuries before the Christian era. One ancient Greek legend states that the Greeks destroyed a Scythian fleet by pouring "burning water" on the sea. This "burning water" could have been none other than petroleum. Chu Ko Liang, the famous general in the history of Three Kingdoms, is said to have routed the wild tribes then living in the mountainous lands of Szechuen by driving a large number of squealing cows into their midst, each cow's tail a flaming firebrand. The cows' tails had been dipped in petroleum and then set on fire. The American Indians were found using crude petroleum as a cure for various ailments when the new world was discovered. The Europeans who did the discovering learned to use what they called "rock oil" as potent family medicine.

Perhaps it would be in order here to say something of the history of the introduction of petroleum products to China. It may interest you to know that the first recorded importation of kerosene was 30,000 cases of Brilliant, stocks of the Standard Oil Company, which arrived at Shanghai in 1880 on board a clipper ship. An American firm, the China and Japan Trading Company, made the importation. The Standard Vacuum Oil Company did not commence operation in Shanghai until 1894, with offices at No. 7 the Bund. Distribution of oil to the interior was at first wholly in the hands of the Chinese. Many became wealthy. The late Ching Chong (the oil king whose estate approximated Taels 15,000,000) started as a bumboat man. A Sing, the wealthy stevedore was originally a sampan-man. Both rose to riches by selling kerosene up country. Russian oil was early a serious competitor. Their brands were Rom, Horse and Anchor. The Shell interests bought the right to the latter. Shell Transport and Trading Co. were the first to introduce bulk oil and built tanks in Shanghai about 1895, later at Hankow and Tientsin. They were followed by the Royal-Dutch Petroleum Co. with which they combined to form the present powerful Royal Dutch Shell of which the Asiatic Petroleum Company is a subsidiary.

In many distant interior points, kerosene was not used until recent years. For example, the Southern part of the province of Honan, before the advent of the Peking-Hankow Railway, was, because of the almost complete lack of transportation facilities, an inaccessible area and imported but little foreign merchandise. Foreign lamps and kerosene were unknown. Some time in 1902 an investigation trip was made in Honan, beyond the railhead as it was then. After the trip was completed, a remaining half tin of "Brilliant" was delivered to the innkeeper as an additional gratuity. He was duly grateful, but his gratitude took on what seemed, from our point of view, a queer aspect when he was shortly afterwards discovered carefully pouring the oil into a drain. Asked why he was doing this he replied that he really had no use for the oil, but the tin would prove extremely valuable. The lack of suitable kerosene lamps then prevalent has since been remedied by the introduction of many inexpensive lamps.

Nowadays petroleum, after it is distilled and processed becomes many products such as gasoline, kerosene, lubricating oil, wax and fuel oil and as such has become indispensable to modern industrial life. Our factories, automobiles, airplanes, locomotives, ocean liners, even bicycles have been made possible because of and are helpless without petroleum products. Petroleum played a large part in shaping modern history when it became a deciding factor in the World War. One famous statesman said: "The Allies

floated to victory on a wave of oil." It is well known that German tanks, big guns and other war machinery became useless in the latter days of the war for lack of lubrication. The Italians could never have conquered Ethiopia so easily without the petroleum products which made possible bombing attacks by their airplanes resulting in the killing of thousands of their bold enemies and the destruction of towns and villages. In short, petroleum has revolutionized warfare as well as our ways of living. Let us, then, see how Mother Nature was made to give up her stores of petroleum to be used and misused by mankind.

Petroleum's first industrial use was in the crude state as a substitute for whale oil in lamps in the middle of the 18th century. The only supplies at that time came from natural wells or seepages. In search of a more abundant supply, Edwin Laurence (Laurencine)? Drake in 1857 drilled the first oil well on a tract of 100 acres in the state of Pennsylvania in the U.S.A., the properties of Bisell's syndicate. The results were so satisfactory that more and more wells were drilled until now there are hundreds of thousands of wells drilled in many parts of the world.

New processes of distillation have also increased the yield of gasoline from a given quantity of crude petroleum in recent years to keep pace with increased demand. According to an authorized record in U.S.A. for 1929, principal products yielded from a 42 gallon barrel of crude oil were:

16.5 gallons gasoline	19.1 gallons gas and fuel oil
2.4 " kerosene	1.5 " lubricating oil

In 1899, only 5.4 gallons of gasoline were derived from the same quantity of crude oil. The demand for gasoline has grown. Twenty years ago there were only seven motor-cars in Nanking. The total monthly gasoline consumption was not more than 500 gallons. At present motor vehicles of all types in this new capital are estimated to be over 5,000 units which consume approximately 250,000 gallons a month.

The demand for aviation gasoline is also growing rapidly. Every country is building an air force which is apparently as important as a big navy or a strong army these days. Commercial air lines like Pan American airways and The British Imperial airways are all newly established. The rapid growth of travel by air has created an ever growing demand for highest grades of gasoline as well as lubricating oil.

Improvement has also been made in the refinery of aviation gasoline. Some fuels are made anti-knock by the addition of benzol or of small quantities of tetraethyl lead. The effect of the anti-knock quality is to produce a slower and more even explosion in the cylinder.

Petroleum lubrication opened the way for a new era of mechanical development. Machines capable of moving at higher speeds and of turning out greatly increased amounts of work all are made possible by good lubrication. In consequence, choice of lubricants is a subject which engineers must study carefully. Oil companies must work with makers of new machinery to develop new oils to meet new lubrication requirements.

Enormous amounts of oil have already been drawn from the earth and used; but even greater amounts seem to remain. No one can say how much remains. We only know what is called "proved reserves." At the end of 1935, the proved reserves of crude oil throughout the world totalled 23,800,000,000 barrels. Oddly enough, this reserve was almost evenly divided between the U.S.A. and all the rest of the world.

While new sources of supply are being found from time to time it is none-the-less true that the world's supply is necessarily limited and ultimately must be exhausted. To date no satisfactory substitutes for petroleum in the way of fuel for engines or lubrication that can be cheaply produced in large quantities has been found.

It can well be said that petroleum is the life-blood that runs in the arteries of the living world to-day. If petroleum suddenly ceased to flow through those arteries it is doubtful if civilization as we know it could survive.

Engineering Notes

RAILWAYS

NEW FUSAN-KEIJO RAILWAY.—Approval of plans for construction of a railway between Keijo, capital of Korea, and Fusan, opposite Shimonoseki, to parallel the present railway, is being sought by the Government-General of Korea. Five years will be needed to complete the line, and Y.100,000,000 will be required. Expenditure during the first of the required five years is estimated at Y.10,000,000. Construction work is expected to start immediately after approval is given by the Diet.

NEW BRANCH RAILWAY.—Construction of the branch line of the Canton-Hankow Railway, linking the City of Rams with Whampoa Harbor, 15 miles east of the city, started last November. The first station is at Yaotai. The Ministry of Railways is financing the line, in conjunction with the Kwangtung Provincial Government. The line, when completed, will serve as a direct link for the Whampoa harbor, where all goods from the interior will be unloaded.

GERMAN RAILWAY CREDIT.—The Ministry of Railways at Nanking, has announced the conclusion of a ten-year \$30,000,000 credit purchasing agreement with the Otto Wolf concern, of Cologne, for the construction of 1,000 kilometers of railway linking Chuchow (Province of Hunan) with Kweiyang (Province of Kweichow).

The Ministry also announces a 12-year agreement for \$10,000,000 (Chinese) for the repair of the Yellow River Bridge on the Peking-Hankow railway.

NEW RAILWAY PLANNED.—Construction of an 800-kilometer railway in the Tungpientao District, close to the Manchoukuo-Korean Border, was decided recently by the South Manchuria Railway Company.

The region is important both economically, because of its vast untapped iron and lumber resources, and strategically, its location is close to the Soviet Border.

The construction work will be begun in the near future. A total of Yen 10,000,000 has been appropriated for this year's expenses. The railway is expected to be completed by 1940, at the cost of Yen 80,000,000.

Another Yen 1,000,000 was appropriated for the improvement of the Hulutao Harbor.

CHINESE RAILWAYS EXPANSION.—During his recent visit to Shanghai, the Minister of Railways approached the local banking circles for a loan for the construction of new railways in Kweichow, Yunnan, Szechuen, Kwangsi and other provinces and the extension of the Peiping-Suiyuan, Kiaochow-Tsinan Railways and other lines.

INDUSTRIAL

SODA INDUSTRY.—We understand that, to protect the local industry by impeding the import of British caustic soda, the Japanese import duty on this chemical is shortly to be raised. The reported increase is believed to be over 100 per cent in advance of the existing rate.

SIAMESE TIN FOR JAPAN.—It is reported that Japan gets most of her tin through Singapore at present, but she hopes in future to obtain more from Siam and that Japan hopes to increase her exports of manufactures to Siam, in exchange of more raw materials from Siam, particularly teak, cotton, and rice.

CANTON WATERWORKS.—Contracts with British firms involving sums of approximately £136,000 and £200,000 were awarded respectively to Malcolm Co. and the General Electric Co., Ltd., some time ago.

The contracts are each for the extensive improvement of the Canton waterworks and the provision of 64 Leyland trolley buses.

Orders were signed following an exchange of visits between the Governor of Hongkong, Sir Andrew Caldecott, and the Canton authorities, and are regarded as evidence of closer economic co-operation between China and Great Britain.

JAPAN IMPORTS PIG-IRON.—Japanese iron manufacturing companies, abandoning their dependence on Soviet Russia for supplies of pig-iron, are now planning to import it from India.

This was learned after a conference here between leading members of the Ministry of Commerce to discuss steps to cope with the dearth of pig-iron. During last year Japan imported 800,000 tons of pig-iron from the U.S.S.R.

The Ministry of Commerce estimates Japanese demands for pig-iron for 1937 at 3,600,000 metric tons and for steel at 4,650,000 metric tons, showing an increase respectively of 300,000 metric tons and 500,000 metric tons compared with last year.

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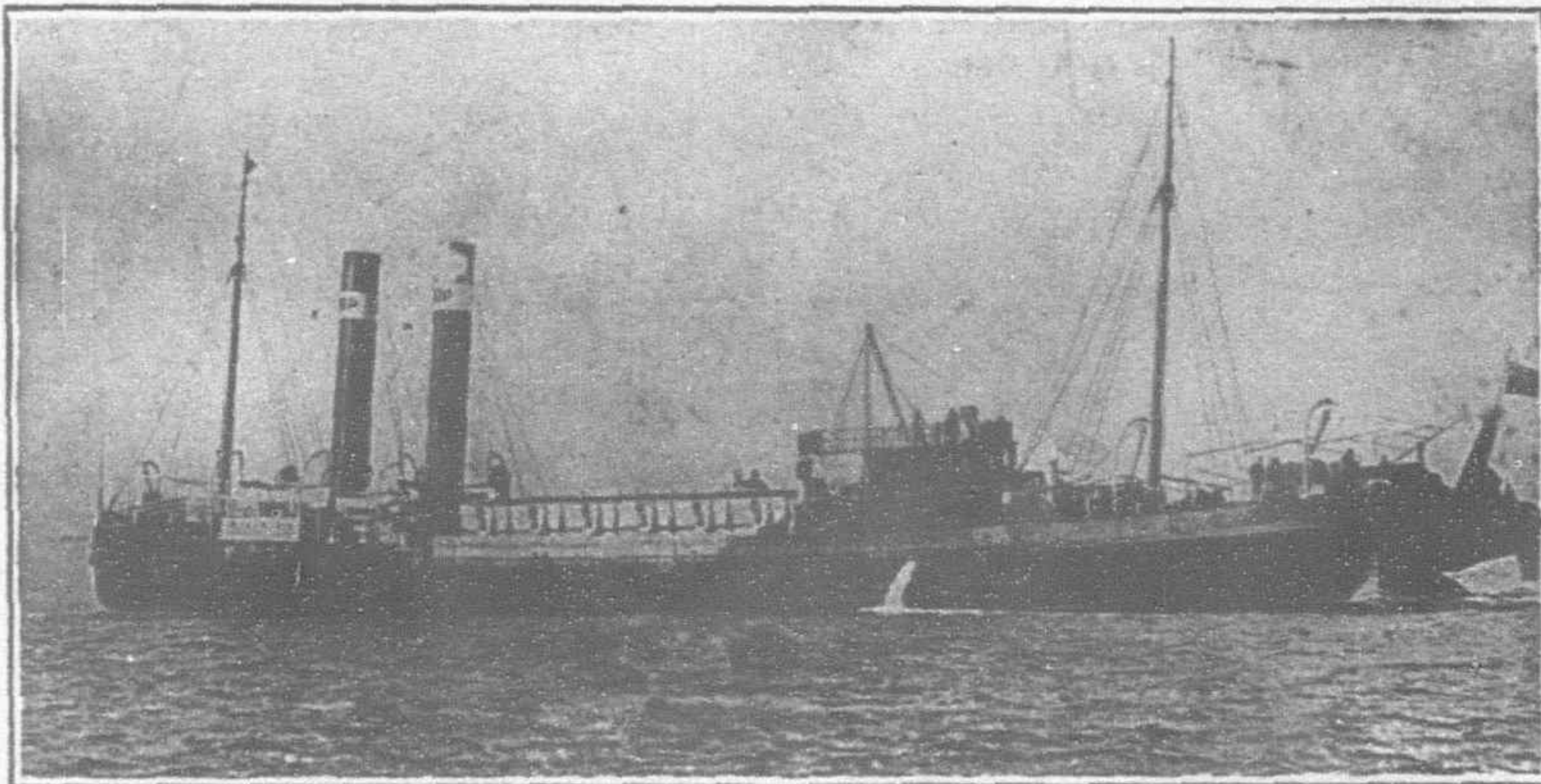
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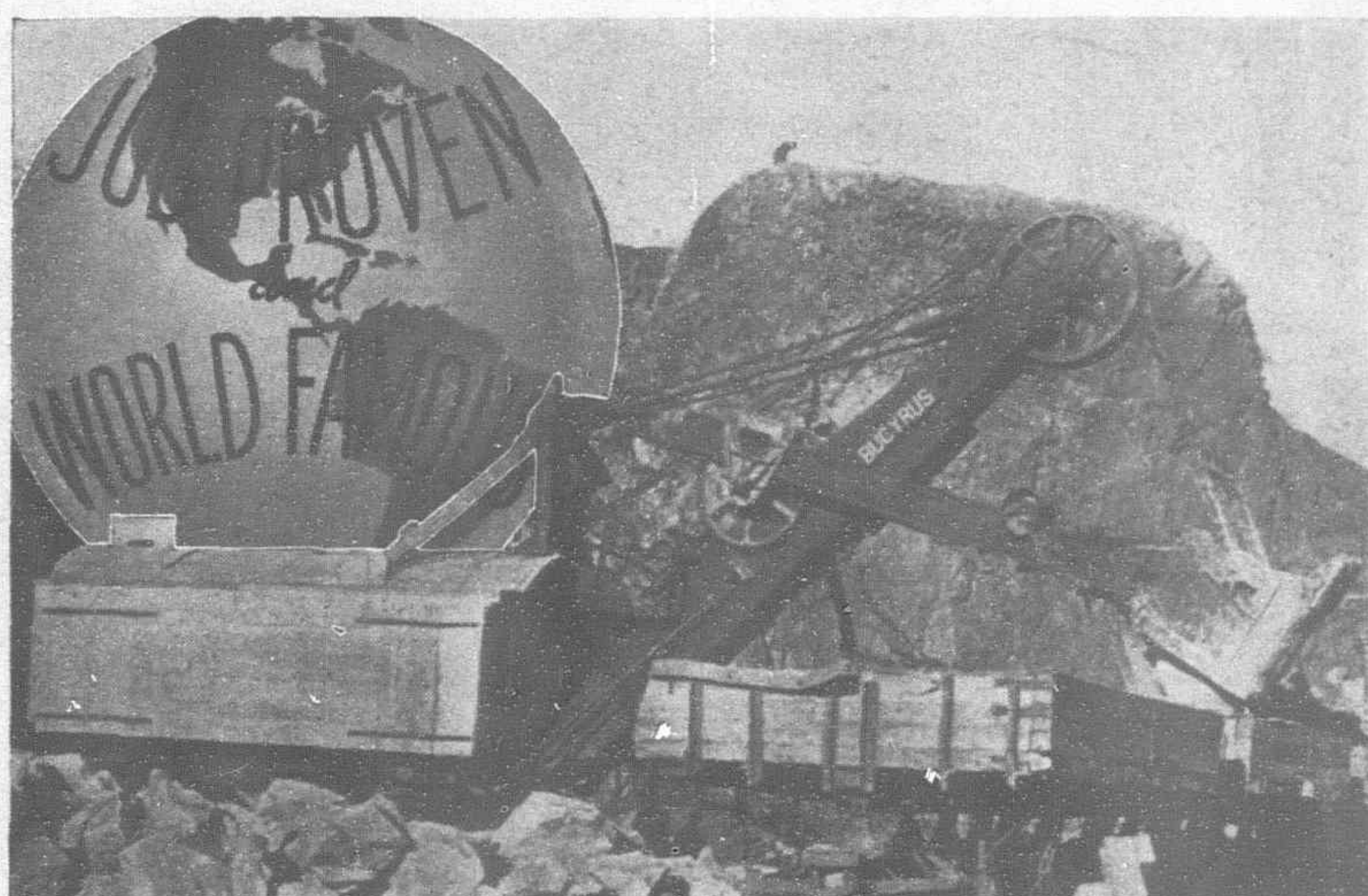
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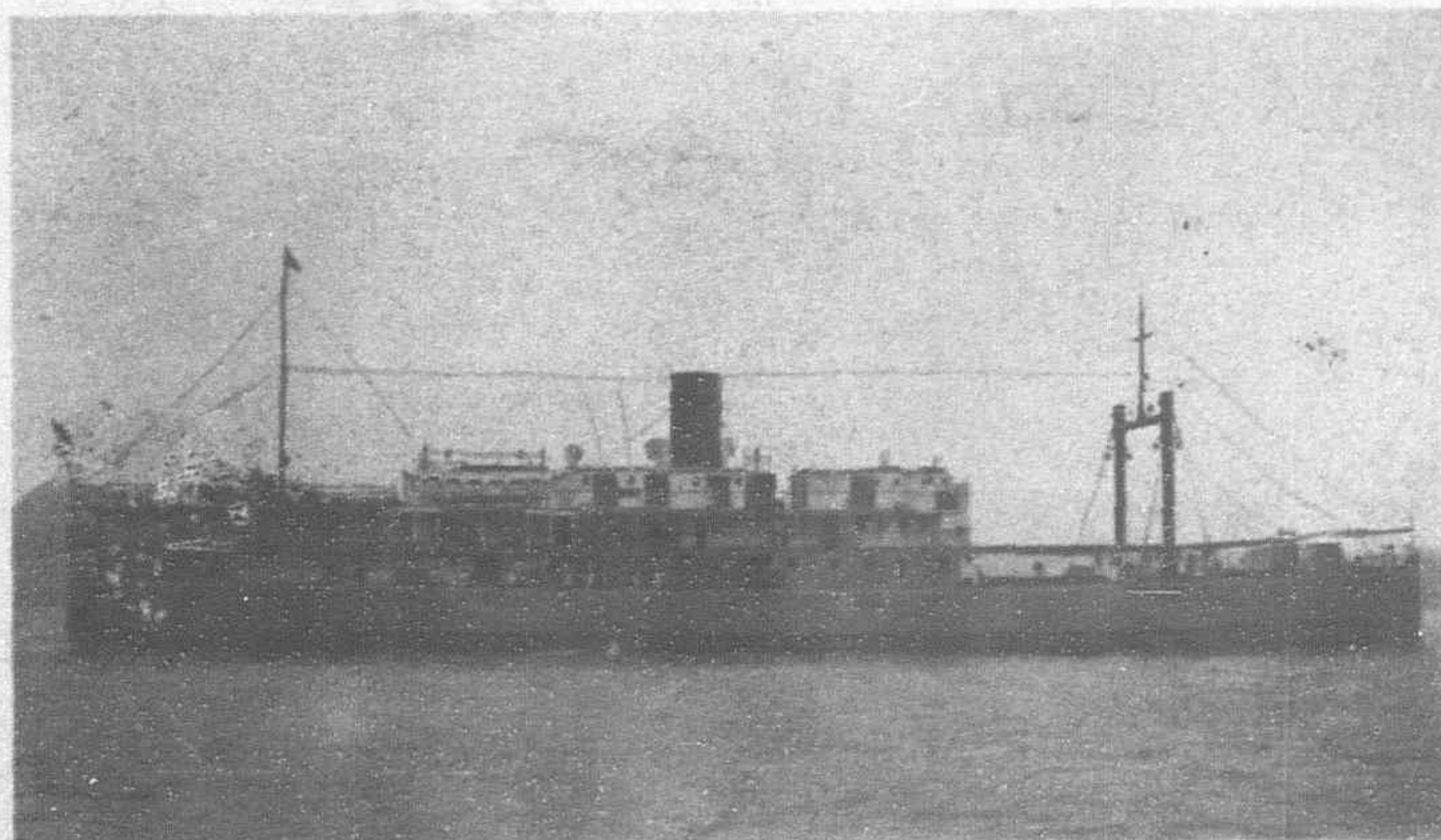
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